

India's Number 1 Education App

#### **CHEMISTRY**

# **BOOKS - VK JAISWAL ENGLISH**

#### **TYPES OF REACTIONS**

#### **LEVEL 1**

1. 
$$Pb(NO_3)_2 + 2NaOH \rightarrow Pb(OH)_2 \downarrow + 2NaNO_3$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

#### Answer: A

$$2. Zn(OH)_2 \downarrow + 2NaOH \rightarrow Na_2ZnO_2 + 2H_2O$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

#### Answer: B



- **3.**  $2Na\left[Al(OH)_4\right] + CO_2 \rightarrow 2Al(OH)_3 \downarrow + Na_2CO_3$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction

Answer: a



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- **4.**  $CuSO_4 + 2NaOH(excess)$  →  $Cu(OH)_2$  ↓  $+ Na_2SO_4$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

Answer: A



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**5.**  $Fe(OH)_3$  ↓ + NaOH(excess) → No reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

#### Answer: d



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# **6.** $Mg(OH)_2 \downarrow + 2HCl \rightarrow MgCl_2 + 2H_2O$

A. For precipitate formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

### Answer: b



7. 
$$Mn(NO_3)_2 + 2NaOH \rightarrow Mn(OH)_2 \downarrow + 2NaNO_3$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



- **8.**  $CH_3COOAg \downarrow + HNO_3 \rightarrow AgNO_3 + CH_3COOH$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction

Answer: b



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- **9.**  $Hg(NO_3)_2 + NH_3(\text{soln.}) \rightarrow MgO \cdot HgNH_2NO_3 \downarrow$ 
  - A. For precipitate formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

Answer: a



B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

#### Answer: b



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- **11.**  $CaC_2O_4 \downarrow + CH_3COOH \rightarrow$  No reaction
  - A. For precipitate formation reaction
    - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

### Answer: d



**12.** 
$$BaC_2O_4$$
 ↓ +  $2AcOH$  →  $Ba(AcO)_2 + H_2C_2O_4$ 

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

#### Answer: b



**13.** 
$$Fe(CN)_2 \downarrow + 4KCN \rightarrow K_4 [Fe(CN)_6]$$

- A. For precipitate formation reaction
- B. For precipitate elimination reaction
- C. For precipitate exchange reaction

Answer: b



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- **14.**  $SrC_2O_4 \downarrow + 2HCl \rightarrow SrCl_2 + H_2C_2O_4$ 
  - A. For precipitate formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

Answer: b



B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

#### Answer: b



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**16.** 
$$CaSO_3$$
 ↓  $+SO_2 + H_2O \rightarrow Ca(HSO_3)_2$ 

A. For precipitate formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

# Answer: b



**17.** 
$$K_4[Fe(CN)_6] + ZnSO_4 \rightarrow Zn_2[Fe(CN)_6] \downarrow$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



**18.** 3*PbS* ↓ + 8*HNO*<sub>3</sub>(*dil.*) → 3*Pb*
$$\left(NO_3\right)_2$$
 + 3*S* + 2*NO* ↑

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction

Answer: b



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- **19.**  $K_4[Fe(CN)_6] + 2CuSO_4 \rightarrow Cu_2[Fe(CN)_6] \downarrow$ 
  - A. For precipitate formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

Answer: a



A. For precipitate formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

#### Answer: b



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**21.** 
$$AgCl \downarrow + 2KCN \rightarrow K \left[ Ag(CN)_2 \right] + KCl$$

A. For precipitate formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

### Answer: b



**22.** 
$$HgS \downarrow + Na_2S \Leftrightarrow Na_2[HgS_2]$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

#### Answer: b



**23.** 
$$CuSO_4 + 2KCN \rightarrow CuCN \downarrow + (CN)_2 \uparrow + K_2SO_4$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction

Answer: a



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- **24.**  $FeS \downarrow + 2HCl \rightarrow FeCl_2 + H_2S \uparrow$ 
  - A. For precipitate formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

# Answer: b



- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

### Answer: b



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**26.** 
$$2AgF + MgCl_2 \rightarrow MgF_2 \downarrow + 2AgCl \downarrow$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



Answer: a

$$27. Pb \left(NO_3\right)_2 + 2KI \rightarrow PbI_2 \downarrow + 2KNO_3$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



**28.** 
$$PbCl_2 \downarrow + \text{hot water } \rightarrow Pb^{2+}(aq.) + 2Cl^{-}(aq.)$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction

Answer: b



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**29.** 
$$HgI_2 \downarrow + KI \Leftrightarrow K_2[HgI_4]$$

A. For precipitate formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

# Answer: b



- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

#### Answer: b



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# **31.** $CuSO_4 + 2KI \rightarrow CuI + \frac{1}{2}I_2 + K_2SO_4$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

#### Answer: a

**32.** 
$$KNO_2 + AgF \rightarrow AgNO_2 \downarrow + KF$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



- **33.**  $BaSO_4 \downarrow + Na_2CO_3 \rightarrow BaCO_3 \downarrow + Na_2SO_4$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction

Answer: c



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- **34.**  $FeCl_3 + Na_3PO_4 \rightarrow FePO_4 \downarrow + 3NaCl$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

Answer: a



B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

#### Answer: d



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B. For precipitate dissolution reaction

A. For precipitate formation reaction

**36.**  $2AgNO_3 + Na_2C_2O_4 \rightarrow Ag_2C_2O_4 \downarrow + 2NaNO_3$ 

C. For precipitate exchange reaction

D. For no reaction

### Answer: a



**37.** 
$$2BaCrO_4 \downarrow + 4HCl \rightarrow 2BaCl_2 + H_2Cr_2 + H_2O$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

#### Answer: b



- **38.**  $PbCrO_4 \downarrow + 4NaOH(excess) \rightarrow Na_2[Pb(OH)_4]$ 
  - A. For precipitate formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction

Answer: b



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- **39.**  $BaCrO_4 \downarrow + CH_3COOH(excess) \rightarrow No reaction$ 
  - A. For precipitate formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

Answer: d



B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

#### Answer: c



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**41.** 
$$Ba(NO_3)_2 + Na_2SO_4 \rightarrow BaSO_4 \downarrow + 2NaNO_3$$

A. For precipitate formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

### Answer: a



**42.** 
$$Pb(NO_3)_2 + H_2SO_4 \rightarrow PbSO_4 \downarrow + 2HNO_3$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



- **43.**  $SrCrO_4$  ↓ + 2AcOH(excess) →  $Sr(ArO)_2$  → No dissolution
  - A. For precipitate formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction

Answer: b



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- **44.**  $MCrO_4 \downarrow \left(M^{2+} = Ba^{2+}Pb^{2+}\right) + AcOH \rightarrow \text{No dissolution}$ 
  - A. For precipitate formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

#### Answer: d



B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

#### Answer: a



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**46.** 
$$CaSO_4 + Pb(NO_3)_2 \rightarrow PbSO_4 \downarrow + Ca(NO_3)_2$$

A. For precipitate formation formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

### Answer: a



**47.** 
$$Hg_2(NO_3)_2 + NH_3(\text{solution}) \rightarrow Hg \downarrow + HgO \cdot NH_2NO_3 \downarrow$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



- **48.**  $BaCO_3 \downarrow + 2HCl \rightarrow BaCl_2 + CO_2 \uparrow + H_2O$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction

Answer: b



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- **49.**  $AlCl_3 + 3NaOH \rightarrow Al(OH)_3 \downarrow + 3NaCl$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

Answer: a



B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

#### Answer: b



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# **51.** $ZnS \downarrow + 2HCl \rightarrow ZnCl_2 + H_2S \uparrow$

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

A. For precipitate formation formation reaction

D. For no reaction

### Answer: b



$$52. NiCl2 + 2dmg \rightarrow Ni(dmg)2$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



- **53.**  $CaCl_2 + Na_2SO_4 \rightarrow No reaction$ 
  - A. For precipitate formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction

Answer: d



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- **54.**  $BaCO_3 \downarrow + 2AcOH \rightarrow Ba(AcO)_2 + CO_2 \uparrow + H_2O$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

Answer: b



B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

#### Answer: a



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# **56.** $Ba(AcO)_2 + K_2CrO_4 \rightarrow BaCrO_4 \downarrow + 2AcOK$

A. For precipitate formation formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: a



**57.** 
$$3AgNO_3 + Na_3PO_4 \rightarrow Ag_3PO_4 \downarrow + 3NaNO_3$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



**58.** 
$$Ag_2CO_3$$
 ↓ + 2 $HCl$  →  $AgCl$  ↓ +  $CO_2$  ↑ +  $H_2O$ 

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction

#### Answer: c



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- **59.**  $BaSO_3 \downarrow + H_2SO_4 \rightarrow BaSO_4 \downarrow + SO_2 \uparrow + H_2O$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

#### Answer: c



A. For precipitate formation formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

### Answer: d



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**61.** 
$$Sr(AcO)_2 + Ag_2SO_4 \rightarrow 2AcOAg \downarrow + SrSO_4 \downarrow$$

B. For precipitate dissolution reaction

A. For precipitate formation formation reaction

C. For precipitate exchange reaction

D. For no reaction

# Answer: a



**62.** 
$$Ca(OH)_2 + 2FH \rightarrow CaF_2 \downarrow + 2H_2O$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



**63.** 
$$Ca(OH)_2 + CO_2 \rightarrow CaCO_3 \downarrow + 2H_2O$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction

D. For no reaction

Answer: a



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- **64.**  $CaSO_3 \downarrow H_2SO_4 \rightarrow CaSO_4 + SO_2 \uparrow H_2O$ 
  - A. For precipitate formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

## Answer: b



A. For precipitate formation formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

#### Answer: a



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# **66.** $Na_2SO_3 + BaCl_2 \rightarrow BaSO_3 \downarrow + 2NaCl$

B. For precipitate dissolution reaction

A. For precipitate formation formation reaction

C. For precipitate exchange reaction

D. For no reaction

# Answer: a



**67.** 
$$Pb(AcO)_2 + H_2S \rightarrow PbS \downarrow + 2AcOH$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



- **68.**  $NaCl + AbNO_3 \rightarrow AgCl \downarrow + NaO_3$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction

D. For no reaction

Answer: a



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- **69.**  $HgI_2 \downarrow + 2HI \rightarrow K_2[HgI_4]$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

Answer: b



A. For precipitate formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

#### Answer: d



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**71.** 
$$PbO_2 \downarrow + HNO_3(Conc.) \rightarrow Pb(NO_3)_2 + H_2O + [O]$$

A. For precipitate formation formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

### Answer: b



**72.** 
$$K_2 \left[ Cd(CN)_4 \right] + H_2S \rightarrow CdS \downarrow + 2KCN + 2HCN$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



**73.** 
$$Pb(AcO)_2 + Na_2CrO_4 \rightarrow PbCrO_4 \downarrow + 2AcONa$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction

D. For no reaction

Answer: a



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- **74.**  $NaBr + AgNO_3 \rightarrow AgBr \downarrow + NaNO_3$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

Answer: a



A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and other one with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



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## **76.** $SO_2 + H_2O \rightarrow H_2SO_3$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: b



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**77.** 
$$BF_3 + H_2O \rightarrow H_3BO_3 + H[BF_4]$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



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## **79.** $H_4 P_2 O + H_2 O \rightarrow H_3 PO_3$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: b



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**80.**  $\underline{C}O + H_2O \rightarrow \text{No reaction}$ 

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: d



- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



- **82.**  $H_4P_2O_6 + H_2O \rightarrow H_3PO_3 + H_3PO_4$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix
  - C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.
  - D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: c



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**83.** 
$$\underline{B}Cl_3 + H_2O \rightarrow H_3BO_3 + HCl$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



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## **85.** $\underline{C}O_2 + H_2O \rightarrow H_2CO_3$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



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## **86.** $\underline{C}l_2O + H_2O \rightarrow HClO$

A. the product is oxy acid with -ic suffix.

B. the product is oxy acid with -ous suffix

C. the product are two oxy acids one with -ic suffix and otherone with -

D. the product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: b



- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



- **88.**  $CCl_4 + H_2O \rightarrow \text{No reaction}$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix
  - C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.
  - D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: d



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**89.**  $\underline{C}IF_5 + H_2O \rightarrow HClO_3 + HF$ 

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: d



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## **91.** $\underline{C}lO_2 + H_2O \rightarrow HClO_2 + HClO_3$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: c



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## **92.** $H_4P_2O_8 + H_2O \rightarrow H_3PO_4 + H_2O_2$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: d



- **94.**  $\underline{B}rF_5 + H_2O \rightarrow HBrO_3 + HF$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix
  - C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.
  - D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



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**95.**  $\underline{N}O + H_2O \rightarrow \text{No reaction}$ 

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: d



- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



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## **97.** $H\underline{N}O_4 + H_2O \rightarrow HNO_3 + H_2O_2$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



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**98.**  $NCl_3 + 3H_2O \rightarrow NH_3 + 3HOCl$ 

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: b



A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



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## **100.** $N_2O_3 + H_2O \rightarrow HNO_2$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: b



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**101.**  $\underline{C}l_2O_7 + H_2O \rightarrow HClO_4$ 

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



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### **103.** $\underline{S}iF_4 + H_2O \rightarrow H_4SiO_4 + HF$

- A. the product is oxy acid with -ic suffix.
- B. the product is oxy acid with -ous suffix
- C. the product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. the product is not oxy acid, neither with -ic suffix nor with -ous

suffix

#### Answer: a



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## **104.** $\underline{I}Cl_3 + H_2O \rightarrow HIO_2 + HCl$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: b



**105.** 
$$N_2O_4 + H_2O \rightarrow HNO_3 + HNO_2$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: c



**106.** 
$$I_2O_5 + H_2O \rightarrow HIO_3$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



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# **107.** $H_2 \underline{S}O_5 + H_2 O \rightarrow H_2 SO_4 + H_2 O_2$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



**108.** 
$$SiCl_A + H_2O \rightarrow H_ASiO_A + HCl$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



- **109.**  $\underline{C}rO_2Cl_2 + 2H_2O \rightarrow H_2CrO_4 + 2HCl$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



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# **110.** $N_2O_5 + H_2O \rightarrow HNO_3$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



**111.** 
$$\underline{P}Cl_3 + H_2O \rightarrow H_3PO_3 + HCl$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: b



- **112.**  $\underline{C}lF_3 + H_2O \rightarrow HClO_2 + HF$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: b



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## 113. $SiO_2 + H_2O \rightarrow No reaction$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: d



**114.** 
$$H_4B_2O_5 + H_2O \rightarrow 2H_3BO_3$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



- **115.**  $H_4S_2O_6 + H_2O \rightarrow H_2SO_3 + H_2SO_4$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: c



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# **116.** $\underline{P}Cl_5 + H_2O \rightarrow H_3PO_4 + 5HCl$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



**117.** 
$$ClF + H_2O \rightarrow HOCl + HF$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: b



- **118.**  $P_4O_6 + 6H_2O \rightarrow 4H_3PO_3$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



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# **119.** $H_4 B_2 O_6 + H_2 O \rightarrow H_3 B O_3 + H_2 O_2$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



**120.** 
$$H_6Si_2O_7 + H_2O \rightarrow H_4SiO_4$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



- **121.**  $\underline{S}F_4 + H_2O \rightarrow H_2SO_3 + HF$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



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# **122.** $BrF + H_2O \rightarrow HBrO + HF$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



**123.** 
$$H_2S_2O_7 + H_2O \rightarrow H_2SO_4$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



- **124.**  $H_2S_2O_8 + H_2O \rightarrow H_2SO_4 + H_2O_2$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



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# **125.** $\underline{S}F_6 + H_2O \rightarrow \text{No reaction}$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: d



**126.** 
$$\underline{I}Cl + H_2O \rightarrow HIO + HCl$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: b



- **127.** $\underline{I}Cl + H_2O \rightarrow HIO + HCl$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



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# **128.** $P_4O_{10} + H_2O \rightarrow H_3PO_4$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



**129.** 
$$POCl_3 + H_2O \rightarrow H_3PO_4 + HCl$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



- **130.**  $\underline{I}OF_5 + H_2O \rightarrow HIO_4 + HF$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



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# **131.** $P_A + H_2O \rightarrow \text{No reaction}$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: d



**132.** 
$$Na\underline{H} + H_2O \rightarrow NaoH + H_2$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: d



- **133.**  $B_2H_6 + H_2O \rightarrow H_3BO_3 + H_2$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



# **134.** $Cl_2 + H_2O \rightarrow HOCl + HCl$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



**135.**  $S_{\underline{a}} + H_2O \rightarrow \text{No reaction.}$ 

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: d



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**136.**  $\underline{SOCl}_2 + H_2O \rightarrow H_2SO_3 + HCl$ 

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



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# **137.** $SO_2Cl_2 + H_2O \rightarrow H_2SO_4 + HCl$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



**138.** 
$$SiH_4 + H_2O \rightarrow H_4SiO_4 + H_2$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



- **139.**  $I_2 + H_2O \rightarrow \text{No reaction}$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: d



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# **140.** $\underline{S}OF_4 + H_2O \rightarrow H_2SO_4 + HF$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



**141.** 
$$F_2 + H_2O \rightarrow HF + O_2$$
 (Ozonide oxygen)

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: d



**142.** 
$$C(s) + O_2(g) \stackrel{\Delta}{\to} CO_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

## Answer: d



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**143.**  $3Mg(s) + N_2(g) \rightarrow Mg_3N_2$ 

A. For disproportionation reaction.

B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: d



**144.** 
$$NaH(s) + H_2O \rightarrow NaOH + H_2 \uparrow$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



- **145.**  $CuSO_4(aq.) + Zn(s) \rightarrow ZnSO_4 + Cu \uparrow$ 
  - A. For disproportionation reaction.
  - B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



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# 146. $Na(s) + H_2O(l) \rightarrow NaOH + H_2$

A. For disproportionation reaction.

B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



147. 
$$Ca(s) + H_2O(l) \rightarrow Ca(OH)_2 + H_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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warm

**148.** 
$$Mg(s) + H_2O(l) \rightarrow Mg(OH)_2 + H_2$$

A. For disproportionation reaction.

- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



**149.** 
$$Fe(s) + H_2O(l) \rightarrow Fe_3O_4 + H_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**150.** 
$$Zn(s) + 2HCl \rightarrow ZnCl_2 + H_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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# **152.** $Fe(s) + 2HCl \rightarrow FeCl_2 + H_2$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**153.** 
$$Cl_2(g) + KI(aq.) \rightarrow KCl + I_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



**154.** 
$$H_2O_2 \rightarrow H_2O + \frac{1}{2}O_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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# **155.** $P_4$ + $NaOH \rightarrow PH_3 \uparrow + NaH_2PO_2$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**156.**  $S_8 + NaOH \rightarrow Na_2S + Na_2S_2O_3$ 

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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## **158.** $I_2 + NaOH \rightarrow NaI + NaOI$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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159.  $Pb_3O_4 + HCl(dil.)$  →  $PbCl_2$   $\checkmark$  +  $Cl_2 + H_2O$ 

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**161.** 
$$PbO_2 + HCl(dil.) \xrightarrow{warm} PbCl_2 \downarrow + Cl_2 \uparrow + H_2O$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.

decomposition redox reaction.

- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal



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**162.** 
$$Cr_2O_7^{2^-} + H^+ + SO_3^{2^-} \rightarrow Cr^{3^+}(aq.) + SO_4^{2^-}$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



**163.** 
$$MnO_4^- + H^+ + Br^- \rightarrow Mn^{3+}(aq.) + Br_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



**164.** 
$$Fe^{2+}(aq.) + Cr_2O_7^{2-} + H^+ \rightarrow Fe^{3+}(aq.) + Cr^{3+}$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**165.** 
$$I_2 + S_2 O_3^{2-} \rightarrow I^- + S_4 O_6^{2-}$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



**167.** 
$$CuO + H_2 \rightarrow Cu \downarrow + H_2O$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**168.** 
$$H_3PO_2 + AgNO_2 \rightarrow Ag ↓ + H_3PO_4 + NO$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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## $170. NaNO_3 \rightarrow NaNO_2 + O_2$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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171. 
$$N_2O_3 \to NO + NO_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



**173.** 
$$XeF_4 + H_2O \rightarrow Xe + XeO_3 + HF + O_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



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**174.** 
$$XO + I_2O_5(s) \rightarrow CO_2 + I_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



**176.** 
$$MnO_2 + 2KOH + \frac{1}{2}O_2 \rightarrow K_2MnO_4 + H(2)O$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**177.** 
$$K_2MnO_4 + H^+$$
 →  $KMnO_4 + MnO_2$  ↓

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**179.** 
$$K_2Cr_2O_7 \stackrel{\Delta}{\to} K_2CrO_4 + Cr_2O_3 + O_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.

decomposition redox reaction.

- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal



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**180.** 
$$(NH_4)_2 Cr_2 O_7 \stackrel{\Delta}{\to} N_2 + Cr_2 O_3 + H_2 O$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: d



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**182.** 
$$Ba(N_3)_2 \stackrel{\Delta}{\rightarrow} Ba + N_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.

decomposition redox reaction.

- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal



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High temp.  $N_2 + O_2 \rightarrow NO$  -Heat.

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: cd



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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# $\begin{array}{c} \Delta \\ \mathbf{185.} \ NH_4NO_3 \rightarrow N_2O + H_2O \end{array}$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**186.** 
$$NaNO_3 + FeSO_4 + H_2SO_4 \rightarrow \left[ Fe \left( H_2O \right)_5 NO \right] SO_4 (Ring complex)$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



**188.** 
$$Pb(NO_3)_2 \stackrel{\Delta}{\rightarrow} PbO + NO_2 + O_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**189.** 
$$P_4$$
 +  $6Cl_2$   $\xrightarrow{\Delta}$   $PCl_3$ 

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: cd



**190.** 
$$P_4$$
 +  $10Cl_2 \xrightarrow{\Delta} PCl_5$ 

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



$$\begin{array}{c} \Delta \\ \textbf{191.} \, Ag + PCl_5 \rightarrow AgCl + PCl_3 \end{array}$$

- A. For disproportionation reaction.
- ${\bf B.} \ {\bf For} \ {\bf comproportionation} \ {\bf reaction}.$
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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$$\begin{array}{c} \Delta \\ \textbf{192.} \ Sn + PCl_5 \rightarrow SnCl_4 + PCl_3 \end{array}$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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### **194.** Red P+Alkali $\rightarrow Na_4P_2O_6 + P_2H_4$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



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**195.** 
$$H_3PO_3 \xrightarrow{\Delta} H_3PO_4 + PH_3$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: ad



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



**197.** 
$$Na_2S + H_2SO_4$$
(Conc.) →  $S \downarrow + SO_2 + Na_2SO_4$ 

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**198.**  $MnO_2 + NaCl + H_2SO_4(Conc.) \rightarrow MnSO_4 + Cl_2$ 

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



**200.** 
$$NaI + H_2SO_4(Conc.) \rightarrow Na_2SO_4 + SO_2 \uparrow + I_2 \uparrow$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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## **201.** $NaI + MnO_2 + H_2SO_4(Conc.) \rightarrow MnSO_4 + I_2 \uparrow$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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### **203.** $Na_2C_2O_4 + H_2SO_4(Conc.) \rightarrow Na_2SO_4 + CO + CO_2$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



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**204.** 
$$3PbS \downarrow + 8HNO_3(dil.) \rightarrow 3Pb(NO_3)_2 + 3S + 2NO \uparrow$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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#### **206.** $CuSO_{\Delta} + Zn(s) \rightarrow ZnSO_{\Delta} + Cu$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**207.** 
$$Zn(OH)_2 \downarrow + 2NaOH \rightarrow Na_2ZnO_2 + 2H_2O$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: c



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**208.**  $Mn(OH)_2 + H_2SO_4 \rightarrow MnSO_4 + 2H_2O$ 

A. For coloured ppt./Black ppt

- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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## **209.** $2AgNO_3 + 2NaOH \rightarrow Ag_2O \downarrow + 2NaNO_3 + H_2O$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: a



**210.** 
$$Cr(OH)_3 \downarrow + NH_3(Excess) \rightarrow \left[Cr(NH_3)_6\right]^{3+}$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



**211.** 
$$CuSO_4 + NH_3(excess) \rightarrow \left[ Cu(NH_3)_4 \right]^{2+}$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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**212.** 
$$NiCl_2 + NH_3(excess) \rightarrow \left[Ni(NH_3)_6\right]^{2+}$$

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

#### Answer: b



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**213.** 
$$FeCl_3 + NH_3(excess) \rightarrow Fe(OH)_3 \downarrow$$

A. For coloured ppt./Black ppt

- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: a



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## **214.** $Na_2[Zn(OH)_4] + 4HCl \rightarrow ZnCl_2 + NaCl + H_2O$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: c



**215.** 
$$\left[ Cr(NH_3)_6 \right]^{3+} + 6HCl \rightarrow Cr^{3+}(aq) + 6NH_4Cl$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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## **216.** $2KCN + Pb(NO_3)_2 \rightarrow Pb(CN)_2 \downarrow + 2KNO_3$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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**217.** 
$$4KCN + Fe(CN)_2 \downarrow \rightarrow K_4 [Fe(CN)_6]$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: b



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**218.** 
$$3KCN + Fe(CN)_3 \downarrow \rightarrow K_3[Fe(CN)_6]$$

A. For coloured ppt./Black ppt

- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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# **219.** $CuSO_4 + KCN(excess) \rightarrow K_3 \left[ Cu(CN)_4 \right] + \frac{1}{2} (CN)_2$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: c



**220.** 
$$K_3[Fe(CN)_6] + FeCl_3 \rightarrow Fe[Fe(CN)_6] \downarrow$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



**221.** 
$$K_3[Fe(CN)_6] + FeCl_3 \rightarrow Fe[Fe(CN)_6] \downarrow$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: a



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**222.** 
$$KI + BiI_2 \downarrow \rightarrow K[BiI_4]$$

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

#### Answer: b



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**223.** 
$$2KI + HgI_2 \downarrow \rightarrow K_2[HgI_4]$$

A. For coloured ppt./Black ppt

- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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### **224.** $KI + AgNO_3 \rightarrow AgI \downarrow$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: a



**225.**  $2KI + FeCl_2 \rightarrow \text{No reaction}.$ 

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

## Answer: b



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**226.** 
$$2KI + CuSO_4 \rightarrow CuI + \frac{1}{2}I_2 + K_2SO_4$$

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.



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**227.** 
$$BaCO_3 \downarrow + CO_2 + H_2O \rightarrow Ba(HCO_3)_2$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: c



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**228.** 
$$Ba(OH)_2 + CO_2 \rightarrow BaCO_3 \downarrow + H_2O$$

A. For coloured ppt./Black ppt

- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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# **229.** $BaSO_3 \downarrow + SO_2 + H_2O \rightarrow Ba(HSO_3)_2$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

## Answer: c



**230.** 
$$Ba(OH)_2 + SO_2 \rightarrow BaSO_3 \downarrow + H_2O$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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# **231.** $Na_2CO_3 + PbSO_4 \rightarrow PbCO_3 \downarrow + Na_2SO_4$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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# **232.** $Na_2CO_3 + Pb(NO_3)_2 \rightarrow PbCO_3 \downarrow + NaNO_3$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

# Answer: d



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**233.**  $Na_2CO_3 + KNO_3 \rightarrow No reaction$ 

A. For coloured ppt./Black ppt

- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: c



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# **234.** $Na_2CO_3 + AgNO_3 \rightarrow Ag_2CO_3 \downarrow + NaNO_3$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

# Answer: d



**235.** 
$$Na_3PO_4 + Fe_2(SO_4)_3 \rightarrow FePO_4 \downarrow + Na_2SO_4$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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# **236.** $NiCl_2(\text{solution}) + NaNO_3(\text{solution}) \rightarrow \text{No reaction}$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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# **237.** $CuSO_4(\text{solution}) + ZnCl_2(\text{solution}) \rightarrow \text{No reaction}$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

# Answer: b



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**238.** 
$$FeSO_4 + Na_2S \rightarrow FeS \downarrow$$

A. For coloured ppt./Black ppt

- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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# **239.** $AlCl_3 + Na_3PO_4 \rightarrow AlPO_4 \downarrow$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

# Answer: d



**240.**  $CrCl_3(solution) + ZnSO_4(Solution) \rightarrow No reaction$ 

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

# Answer: b



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**241.**  $Na_2CrO_4 + HCl \rightarrow H_2Cr_2O_7 + Na_2SO_4$ 

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.



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**242.** 
$$K_2Cr_2O_7 + NaoH \rightarrow CrO_4^2$$

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

# Answer: b



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**243.**  $Na_2CrO_4 + AgF \rightarrow Ag_2CrO_4 \downarrow + NaF$ 

A. For coloured ppt./Black ppt

- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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# **244.** $KMnO_4 + NaNO_3 \rightarrow No reaction$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

# Answer: b



**245.** 
$$MnSO_4 + Sr(NO_3)_2 \rightarrow SrSO_4 \downarrow$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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# **246.** $ZnSO_4$ (solution) + $MgCl_2$ (solution) $\rightarrow$ No reaction

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: c



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**247.**  $AgNO_3$ (solution) + NaF(solution)  $\rightarrow$  No reaction.

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

#### Answer: c



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**248.**  $(NH_4)_2 SO_4 + Ba(OH)_2 \rightarrow BaSO_4 \downarrow + 2NH_3 \uparrow$ 

A. For coloured ppt./Black ppt

- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.



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- **249.**  $\left(NH_4\right)_2 SO_4 + Sr(OH)_2 \rightarrow SrSO_4 \downarrow + 2NH_3 \uparrow$ 
  - A. For coloured ppt./Black ppt
  - B. For coloured solution.
  - C. for clear/colourless solution
  - D. For white ppt.

# Answer: d



**250.** 
$$Pb(NO_3)_2 + 2NaOH \rightarrow Pb(OH)_2 \downarrow + 2NaNO_3$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



**251.** 
$$Zn(OH)_2 \downarrow + 2NaOH \rightarrow Na_2ZnO_2 + 2H_2O$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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**252.** 
$$2Na\left[Al(OH)_4\right] + CO_2 \rightarrow 2Al(OH)_3 \downarrow + Na_2CO_3$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

#### Answer: a



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**253.** 
$$CuSO_4 + 2NaOH(excess) \rightarrow Cu(OH)_2 \downarrow + Na_2SO_4$$

A. For precipitate formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **254.** $Fe(OH)_3$ ↓ + NaOH(excess) → No reaction

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: d



**255.** 
$$Mg(OH)_2 \downarrow + 2HCl \rightarrow MgCl_2 + 2H_2O$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **256.** $Mn(NO_3)_2 + 2NaOH \rightarrow Mn(OH)_2 \downarrow + 2NaNO_3$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **257.** $CH_3COOAg \downarrow + HNO_3 \rightarrow AgNO_3 + CH_3COOH$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

#### Answer: b



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**258.** 
$$Hg(NO_3)_2 + NH_3(\text{soln.}) \rightarrow MgO \cdot HgNH_2NO_3 \downarrow$$

A. For precipitate formation formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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**259.** 
$$Cu(OH)_2 \downarrow + 4NH_3(\text{soln.}) \rightarrow \left[ Cu(NH_3)_4 \right]^{2+} + 2OH^{-1}$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



**260.**  $CaC_2O_4$  ↓ +  $CH_3COOH$  → No reaction

A. For precipitate formation formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

# Answer: d



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# **261.** $BaC_2O_4 \downarrow + 2AcOH \rightarrow Ba(AcO)_2 + H_2C_2O_4$

A. For precipitate formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction



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**262.** 
$$Fe(CN)_2 \downarrow + 4KCN \rightarrow K_4 [Fe(CN)_6]$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

## Answer: b



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**263.** 
$$SrC_2O_4 \downarrow + 2HCl \rightarrow SrCl_2 + H_2C_2O_4$$

A. For precipitate formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **264.** $Fe(CN)_2 \downarrow + KCN \rightarrow K_3 Fe(CN)_6$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



**265.** 
$$CaSO_3 \downarrow + SO_2 + H_2O \rightarrow Ca(HSO_3)_2$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



**266.** 
$$K_4[Fe(CN)_6] + 2ZnSO_4 \rightarrow Zn_2[Fe(CN)_6] \downarrow + 2K_2SO_4$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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**267.** 3*PbS* ↓ + 8*HNO*<sub>3</sub>(*dil.*) → 3*Pb*(
$$NO_3$$
)<sub>2</sub> + 3*S* + 2*NO* ↑

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

## Answer: b



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**268.** 
$$K_4[Fe(CN)_6] + 2CuSO_4 \rightarrow Cu_2[Fe(CN)_6] \downarrow + 2K_2SO_4$$

A. For precipitate formation formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **269.** $MnS \downarrow + 2HCl \rightarrow MnCl_2 + H_2S \uparrow$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



**270.** 
$$AgCl \downarrow + 2KCN \rightarrow K \left[ Ag(CN)_2 \right] + KCl$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



**271.** 
$$HgS \downarrow + Na_2S \Leftrightarrow Na_2[HgS_2]$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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**272.** 
$$CuSO_4 + 2KCN \rightarrow CuCN \downarrow + (CN)_2 \uparrow + K_2SO_4$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

#### Answer: a



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**273.** FeS 
$$\downarrow$$
 + 2HCl  $\rightarrow$  FeCl<sub>2</sub> + H<sub>2</sub>S  $\uparrow$ 

A. For precipitate formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **274.** $Cd(CN)_2 \downarrow + 2KCN \rightarrow K_2 \left[ Cd(CN)_4 \right]$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



**275.** 
$$2AgF + MgCl_2 \rightarrow MgF_2 \downarrow + 2AgCl \downarrow$$

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



**276.** 
$$Pb(NO_3)_2 + 2KI \rightarrow PbI_2 \downarrow + 2KNO_3$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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**277.** 
$$PbCl_2 \downarrow + \text{hot water} \rightarrow Pb^2(aq.) + 2Cl^{-}(aq.)$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



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**278.** 
$$HgI_2 \downarrow + KI \Leftrightarrow K_2[HgI_4]$$

A. For precipitate formation formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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**279.** 
$$AgI \downarrow + 2Na_2S_2O_3 \rightarrow Na_3 \left[ Ag(S_2O_3)_2 \right] + NaI$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



**280.** 
$$CuSO_4 + 2KI \rightarrow CuI + \frac{1}{2}I_2 + K_2SO_4$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **281.** $KNO_2 + AgF \rightarrow AgNO_2 \downarrow + KF$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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**282.**  $BaSO_4 \downarrow + Na_2CO_3 \rightarrow BaCO_3 \downarrow + Na_2SO_4$ 

A. For precipitate formation formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

# Answer: c



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**283.**  $FeCl_3 + Na_3PO_4 \rightarrow FePO_4 \downarrow + 3NaCl$ 

A. For precipitate formation formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **284.** $BaSO_4$ ↓ + dil. HCl (excess) → No reaction

- A. For precipitate formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: d



**285.** 
$$2AgNO_3 + Na_2C_2O_4 \rightarrow Ag_2C_2O_4 \downarrow + 2NaNO_3$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **286.** 2BaCrO<sub>4</sub> ↓ + 4HCl → 2BaCl<sub>2</sub> + $H_2$ Cr<sub>2</sub>O<sub>7</sub> + $H_2$ O

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

## Answer: b



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**287.**  $PbCrO_4 \downarrow + 4NaOH(excess) \rightarrow Na_2[Pb(OH)_4] + Na_2CrO_4$ 

A. For precipitate formation formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

## Answer: b



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**288.**  $BaCrO_4$  ↓ +  $CH_3COOH(excess)$  → No reaction

A. For precipitate formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

## Answer: d



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# **289.** $PbCl_2 \downarrow + H_2SO_4 \Leftrightarrow PbSO_4 \downarrow + 2HCL$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: c



**290.** 
$$Ba(NO_3)_2 + Na_2SO_4 \rightarrow BaSO_4 \downarrow + 2NaNO_3$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



**291.** 
$$Pb(NO_3)_2 + H_2SO_4 \rightarrow PbSO_4 \downarrow + 2HNO_3$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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**292.**  $SrCrO_4 \downarrow + 2AcOH(excess) \rightarrow Sr(ArO)_2 \rightarrow No dissolution$ 

A. For precipitate formation formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

## Answer: b



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**293.**  $MCrO_4 \downarrow \left(M^{2+} = Ba^{2+}Pb^{2+}\right) + AcOH \rightarrow \text{No dissolution}$ 

A. For precipitate formation formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

## Answer: d



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# **294.** $CaCl_2 + Na_2C_2O_4 \rightarrow CaC_2O_4 \downarrow + 2NaCl$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: a



**295.** 
$$CaSO_4 + Pb(NO_3)_2 \rightarrow PbSO_4 \downarrow + Ca(NO_3)_2$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



**296.** 
$$Hg(NO_3)_2 + NH_3(\text{soln.}) \rightarrow MgO \cdot HgNH_2NO_3 \downarrow$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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**297.** 
$$BaCO_3 \downarrow + 2HCl \rightarrow BaCl_2 + CO_2 \uparrow + H_2O$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



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**298.**  $AlCl_3 + 3NaOH \rightarrow Al(OH)_3 \downarrow + 3NaCl$ 

A. For precipitate formation formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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**299.** 
$$BaCO_3 \downarrow + CO_2 + H_2O \rightarrow Ba(HCO_3)_2$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



**300.** 
$$ZnS \downarrow + 2HCl \rightarrow ZnCl_2 + H_2S \uparrow$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



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# $301. NiCl<sub>2</sub> + 2dmg \rightarrow Ni(dmg)<sub>2</sub>$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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**302.** `CaCl\_(2)+Na\_(2)SO\_(4)toCaSO\_(4)↓+2NaCl

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: d



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**303.**  $BaCO_3 \downarrow + 2AcOH \rightarrow Ba(AcO)_2 + CO_2 \uparrow + H_2O$ 

A. For precipitate formation formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



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# **304.** $Na_2S_2O_3 + BaCl_2 \rightarrow BaS_2O_3 \downarrow + 2NaCl$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: a



**305.** 
$$Ba(AcO)_2 + K_2CrO_4 \rightarrow BaCrO_4 \downarrow + 2AcOK$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



**306.** 
$$3AgNO_3 + Na_3PO_4 \rightarrow Ag_3PO_4 \downarrow + 3NaNO_3$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **307.** $Ag_2CO_3 \downarrow + 2HCl \rightarrow AgCl \downarrow + CO_2 \uparrow + H_2O$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

## Answer: c



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**308.** 
$$BaSO_3 \downarrow + H_2SO_4 \rightarrow BaSO_4 \downarrow + SO_2 \uparrow + H_2O$$

A. For precipitate formation formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

## Answer: c



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- **309.** HgS ↓ +  $HNO_3$ (conc.) → No dissolution.
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

# Answer: d



**310.** 
$$Sr(ACO)_2 + Ag_2SO_4 \rightarrow 2AcOAg \downarrow + SrSO_4 \downarrow$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **311.** $Ca(OH)_2 + 2FH \rightarrow CaF_2 \downarrow + 2H_2O$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **312.** $Ca(OH)_2 + CO_2 \rightarrow CaCO_3 \downarrow + 2H_2O$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

## Answer: a



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**313.** 
$$CaSO_3 \downarrow H_2SO_4 \rightarrow CaSO_4 + SO_2 \uparrow H_2O$$

A. For precipitate formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



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# **314.** $Ca(OH)_2 + SO_2 \rightarrow CaSO_3 \downarrow + H_2O$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: a



**315.**  $Na_2SO_3 + BaCl_2 \rightarrow BaSO_3 \downarrow + 2NaCl$ 

A. For precipitate formation formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

#### Answer: a



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# **316.** $Pb(AcO)_2 + H_2S \rightarrow PbS \downarrow + 2AcOH$

A. For precipitate formation formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction



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# **317.** $NaCl + AbNO_3 \rightarrow AgCl \downarrow + NaO_3$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

## Answer: a



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**318.** 
$$HgI_2 \downarrow + 2HI \rightarrow K_2[HgI_4]$$

A. For precipitate formation formation reaction

- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



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- **319.**  $PbO_2 + HNO_3(dil.) \rightarrow No dissolution.$ 
  - A. For precipitate formation formation reaction
  - B. For precipitate dissolution reaction
  - C. For precipitate exchange reaction
  - D. For no reaction

# Answer: d



**320.** 
$$PbO_2 \downarrow + HNO_3(Conc.) \rightarrow Pb(NO_3)_2 + H_2O + [O]$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

# Answer: b



**321.** 
$$K_2 \left[ Cd(CN)_4 \right] + H_2S \rightarrow CdS \downarrow + 2KCN + 2HCN$$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction



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# **322.** $Pb(AcO)_2 + Na_2CrO_4 \rightarrow PbCrO_4 \downarrow + 2AcONa$

- A. For precipitate formation formation reaction
- B. For precipitate dissolution reaction
- C. For precipitate exchange reaction
- D. For no reaction

## Answer: a



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**323.**  $NaBr + AgNO_3 \rightarrow AgBr \downarrow + NaNO_3$ 

A. For precipitate formation formation reaction

B. For precipitate dissolution reaction

C. For precipitate exchange reaction

D. For no reaction

## Answer: a



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# **324.** $\underline{B}_{2}O_{3} + H_{2}O \rightarrow H_{3}BO_{3} + H_{2}O \Leftrightarrow H[B(OH)_{4}] + H^{+}$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

# Answer: a



**325.** 
$$\underline{SO}_2 + H_2O \rightarrow H_2SO_3$$

ous suffix.

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

# Answer: b



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# **326.** $\underline{B}F_3 + H_2O \rightarrow H_3BO_3 + H[BF_4]$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

# Answer: a



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# **327.** $\underline{T}eF_{6}$ \_ (6) + $H_{2}O \rightarrow H_{6}TeO_{6}$ + HF

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: a



**328.** 
$$H_4P_2O + H_2O \rightarrow H_3PO_3$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

# Answer: b



- **329.**  $CO + H_2O \rightarrow \text{No reaction}$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

# Answer: d



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# **330.** $SO_3 + H_2O \rightarrow H_2SO_4$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: a



**331.** 
$$H_4P_2O_6 + H_2O \rightarrow H_3PO_3 + H_3PO_4$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: c



- **332.**  $BCl_3 + H_2O \rightarrow H_3BO_3 + HCl$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

# Answer: a



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# **333.** $\underline{I}F_7 + H_2O \rightarrow HIO_4 + HF$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: a



**334.** 
$$\underline{SO}_2 + H_2O \rightarrow H_2SO_3$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix



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# **335.** <u>C</u>l<sub>2</sub>O + H<sub>2</sub>O → HClO

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

# Answer: b



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# **336.** $H_A P_2 O_7 + H_2 O \rightarrow 2H_3 P O_A$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: a



**337.**  $CCl_4 + H_2O \rightarrow \text{No reaction}$ 

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

# Answer: d



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**338.**  $\underline{CIF}_5 + H_2O \rightarrow HClO_3 + HF$ 

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

# Answer: a



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# **339.** $N_2O + H_2O \rightarrow \text{No reaction}$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

# Answer: d



**340.** 
$$ClO_2 + H_2O \rightarrow HClO_2 + HClO_3$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: c



- **341.**  $H_4P_2O_8 + H_2O \rightarrow H_3PO_4 + H_2O_2$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

# Answer: a



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# **342.** $NF_3 + H_2O \rightarrow No reaction$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

# Answer: d



**343.** 
$$\underline{B}rF_5 + H_2O \rightarrow HBrO_3 + HF$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



- **344.**  $\underline{N}O + H_2O \rightarrow \text{No reaction}$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: d



## **345.** $\underline{C}lO_3 + H_2O \rightarrow HClO_3 + HClO_4$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: a



**346.** 
$$H\underline{N}O_4 + H_2O \rightarrow HNO_3 + H_2O_2$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



- **347.**  $\underline{I}F_5 + H_2O \rightarrow HIO_3 + HF$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: d



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## **348.** $\underline{I}F_5 + H_2O \rightarrow HIO_3 + HF$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



**349.** 
$$N_2O_3 + H_2O \rightarrow HNO_2$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



- **350.**  $Cl_2O_7 + H_2O \rightarrow HClO_4$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



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## **351.** $H_3PO_5 + H_2O \rightarrow H_3PO_4 + H_2O_2$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: a



**352.** 
$$\underline{S}iF_4 + H_2O \rightarrow H_4SiO_4 + HF$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



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## **353.** $\underline{I}Cl_3 + H_2O \rightarrow HIO_2 + HCl$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



# **354.** $N_2O_4 + H_2O \rightarrow HNO_3 + HNO_2$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: c



**355.** 
$$I_2O_5 + H_2O \rightarrow HIO_3$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



- **356.**  $H_2SO_5 + H_2O \rightarrow H_2SO_4 + H_2O_2$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: a



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## **357.** $SiCl_A + H_2O \rightarrow H_ASiO_A + HCl$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: a



**358.** 
$$CrO_2Cl_2 + 2H_2O \rightarrow H_2CrO_4 + 2HCl$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



- **359.**  $N_2O_5 + H_2O \rightarrow HNO_3$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: a



## **360.** $PCl_3 + H_2O \rightarrow H_3PO_3 + HCl$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



**361.** 
$$ClF_3 + H_2O \rightarrow HClO_2 + HF$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



- **362.**  $SiO_2 + H_2O$  → No reaction
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: d



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# **363.** $H_4B_2O_5 + H_2O \rightarrow 2H_3BO_3$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



**364.** 
$$H_4S_2O_6 + H_2O \rightarrow H_2SO_3 + H_2SO_4$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: c



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## **365.** $PCl_5 + H_2O \rightarrow H_3PO_4 + 5HCl$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: a



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## **366.** $ClF + H_2O \rightarrow HOCl + HF$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



**367.** 
$$H_4B_2O_6 + H_2O \rightarrow H_3BO_3 + H_2O_2$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



- **368.**  $H_4 B_2 O_6 + H_2 O \rightarrow H_3 B O_3 + H_2 O_2$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



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## **369.** $H_6Si_2O_7 + H_2O \rightarrow H_4SiO_4$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: a



**370.** 
$$\underline{S}F_4 + H_2O \rightarrow H_2SO_3 + HF$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



- **371.**  $\underline{B}rF + H_2O \rightarrow HBrO + HF$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



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## **372.** $H_2S_2O_7 + H_2O \rightarrow H_2SO_A$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



**373.** 
$$H_2S_2O_8 + H_2O \rightarrow H_2SO_4 + H_2O_2$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



- **374.**  $\underline{SF}_6$  +  $H_2O$  → No reaction
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: d



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## **375.** $ICl + H_2O \rightarrow HIO + HCl$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



**376.** 
$$\underline{I}Cl + H_2O \rightarrow HIO + HCl$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: c



- **377.**  $P_4O_{10} + H_2O \rightarrow H_3PO_4$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: a



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## **378.** $POCl_3 + H_2O \rightarrow H_3PO_4 + HCl$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



**379.** 
$$\underline{I}OF_5 + H_2O \rightarrow HIO_4 + HF$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



- **380.**  $P_4 + H_2O \rightarrow \text{No reaction}$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: d



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# **381.** $Na\underline{H} + H_2O \rightarrow NaoH + H_2$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with - ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: d



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**382.** 
$$B_2H_6 + H_2O \rightarrow H_3BO_3 + H_2$$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with -ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

#### Answer: a



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**383.**  $Cl_2 + H_2O \rightarrow HOCl + HCl$ 

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



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**384.**  $S_{\underline{a}} + H_2O \rightarrow \text{No reaction.}$ 

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: d



**385.** 
$$\underline{S}Ocl_2 + H_2O \rightarrow H_2SO_3 + HCl$$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: b



- $\mathbf{386.}\,\underline{SO}_2Cl_2 + H_2O \rightarrow H_2SO_4 + HCl$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: a



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## **387.** $SiH_4 + H_2O \rightarrow H_4SiO_4 + H_2$

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: a



## **388.** $I_2 + H_2O \rightarrow \text{No reaction}$

- A. If product is oxy acid with -ic suffix.
- B. If product is oxy acid with -ous suffix
- C. If product are two oxy acids one with -ic suffix and otherone with -
- D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: d



- **389.**  $\underline{S}OF_4 + H_2O \rightarrow H_2SO_4 + HF$ 
  - A. If product is oxy acid with -ic suffix.
  - B. If product is oxy acid with -ous suffix

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

### Answer: a



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# **390.** $F_2 + H_2O \rightarrow HF + O_2$ (Ozonide oxygen)

A. If product is oxy acid with -ic suffix.

B. If product is oxy acid with -ous suffix

C. If product are two oxy acids one with -ic suffix and otherone with ous suffix.

D. If product is not oxy acid, neither with -ic suffix nor with -ous suffix

## Answer: d



**391.** 
$$C(s) + O_2(g) \stackrel{\Delta}{\rightarrow} CO_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

## Answer: d



**392.** 
$$3Mg(s) + N_2(g) \xrightarrow{\Delta} Mg_3N_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

### Answer: d



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# **393.** $Na\underline{H} + H_2O \rightarrow NaoH + H_2$

A. For disproportionation reaction.

B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

## Answer: bc



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**394.** 
$$CuSO_4(aq.) + Zn(s) \rightarrow ZnSO_4 + Cu \downarrow$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



**395.** 
$$Na(s) + H_2O(l) \rightarrow NaOH + H_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

### Answer: c



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**396.** 
$$Ca(s) + H_2O(l) \rightarrow Ca(OH)_2 + H_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

## Answer: c



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397. 
$$Mg(s) + H_2O(l) \rightarrow Mg(OH)_2 + H_2$$
↑

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**398.** 
$$Fe(s) + H_2O(l) \rightarrow Fe_3O_4 + H_2$$

A. For disproportionation reaction.

- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**399.** 
$$Zn(s) + 2HCl \rightarrow ZnCl_2 + H_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c

**400.** 
$$Mg(s) + 2HCl \rightarrow MgCl_2 + H_2$$

- A. For disproportionation reaction.
- $\hbox{\bf B. For comproportionation reaction.}\\$
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



- **401.**  $Fe(s) + 2HCl \rightarrow FeCl_2 + H_2$ 
  - A. For disproportionation reaction.
  - B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

### Answer: c



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**402.**  $Cl_2(g) + KI(aq.) \rightarrow KCl + I_2$ 

A. For disproportionation reaction.

B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



**403.** 
$$H_2O_2 \rightarrow H_2O + \frac{1}{2}O_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: ad



**404.** 
$$P_4$$
 +  $NaOH \rightarrow PH_3 \uparrow + NaH_2PO_2$ 

- A. For disproportionation reaction.
- B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



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**405.**  $S_8 + NaOH \rightarrow Na_2S + Na_2S_2O_3$ 

A. For disproportionation reaction.

B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



**406.** 
$$Cl_2 + NaoH \rightarrow NaCl + NaOCl$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



- **407.**  $I_2 + NaOH \rightarrow NaI + NaOI$ 
  - A. For disproportionation reaction.
  - B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



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**408.** 
$$Pb_3O_4 + HCl(dil.) \rightarrow PbCl_2 + Cl_2 + H_2O$$

A. For disproportionation reaction.

B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



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**409.** 
$$Pb_3O_4 + HNO_3(dil.) \rightarrow Pb(NO_3)_2 + PbO_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**410.** 
$$PbO_2 + HCl(dil.) \rightarrow PbCl_2 \downarrow + Cl_2 \uparrow + H_2O$$

A. For disproportionation reaction.

- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**411.** 
$$Cr_2O_7^{2-} + H^+ + SO_3^{2-} \rightarrow Cr^{3+}(aq.) + SO_4^{2-}$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c

**412.** 
$$MnO_4^- + H^+ + Br^- \rightarrow Mn^{3+}(aq.) + Br_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**413.** 
$$Fe^{2+}(aq.) + Cr_2O_7^{2-} + H^+ \rightarrow Fe^{3+}(aq.) + Cr^{3+}$$

A. For disproportionation reaction.

- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**414.** 
$$I_2 + S_2 O_3^{2-} \rightarrow I^- + S_4 O_6^{2-}$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c

**415.** 
$$Cu^{2+}(aq) + 2I^{-} \rightarrow CuI + \frac{1}{2}I_{2}$$

A. For disproportionation reaction.

B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



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**416.** 
$$CuO + H_2 \rightarrow Cu \downarrow + H_2O$$

A. For disproportionation reaction.

- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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- **417.**  $H_3PO_2 + AgNO_2 \rightarrow Ag \downarrow + H_3PO_4 + NO$ 
  - A. For disproportionation reaction.
  - B. For comproportionation reaction.
  - C. For either intermolecular redox reaction or displacement reaction
  - D. For either thermal combination redox reaction or thermal decomposition redox reaction.

## Answer: c

**418.** 
$$H_3PO_2 + CuSO_4 \rightarrow Cu \downarrow + H_3PO_4 + HNO_3$$

- A. For disproportionation reaction.
- ${\bf B.}\ {\bf For\ comproportionation\ reaction.}$
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



# **419.** $NaNO_3 \rightarrow NaNO_2 + O_2$

A. For disproportionation reaction.

- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: d



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# R.T. **420.** $N_2O_3 \rightarrow NO + NO_2$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: ad

**421.** 
$$Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2$$
 or  $Ca(OCl)Cl$ 

- A. For disproportionation reaction.
- $\hbox{\bf B. For comproportionation reaction.}\\$
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



- **422.**  $XeF_4 + H_2O \rightarrow Xe + XeO_3 + HF + O_2$ 
  - A. For disproportionation reaction.
  - B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



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# **423.** $CO + I_2O_5(s) \rightarrow CO_2 + I_2$

A. For disproportionation reaction.

B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



**424.** 
$$FeCr_2O_4 + Na_2CO_3 + O_2 \rightarrow Fe_2O_3 \downarrow + Na_2CrO_4$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



**425.** 
$$MnO_2 + 2KOH + \frac{1}{2}O_2 \rightarrow K_2MnO_4 + H_2O$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

## Answer: c



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- **426.**  $K_2MnO_4 + H^+ \rightarrow KMnO_4 + MnO_2 \downarrow$ 
  - A. For disproportionation reaction.
  - B. For comproportionation reaction.
  - C. For either intermolecular redox reaction or displacement reaction
  - D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



**427.** 
$$KMnO_4 \rightarrow K_2MnO_4 + MnO_2 + O_2$$

A. For disproportionation reaction.

 ${\bf B.} \ {\bf For} \ {\bf comproportionation} \ {\bf reaction}.$ 

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: d



- **428.**  $K_2Cr_2O_7 \xrightarrow{\Delta} K_2CrO_4 + Cr_2O_3 + O_2$ 
  - A. For disproportionation reaction.
  - B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: d



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**429.** 
$$\left(NH_4\right)_2 Cr_2 O_7 \stackrel{\Delta}{\rightarrow} N_2 \stackrel{\uparrow}{\downarrow} + Cr_2 O_3 \stackrel{\downarrow}{\downarrow} + H_2 O \stackrel{\uparrow}{\uparrow}$$

A. For disproportionation reaction.

B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: d

**430.** 
$$NH_4Cl + NaNO_2 \xrightarrow{\Delta} N_2 \uparrow + NaCl + H_2O$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: b



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**431.** 
$$Ba(N_3)_2 \stackrel{\Delta}{\rightarrow} Ba + N_2$$

A. For disproportionation reaction.

- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: d



**432.** 
$$N_2$$
 +  $O_2$   $\rightarrow$   $NO$  -Heat.

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**433.**  $N_2 + 3H_2 \rightarrow NH_3$ 

A. For disproportionation reaction.

B. For comproportionation reaction.

C. For either intermolecular redox reaction or displacement reaction

D. For either thermal combination redox reaction or thermal decomposition redox reaction.

### Answer: d



**434.** 
$$NH_4NO_3 \rightarrow N_2O + H_2O$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: bd



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**435.** 
$$NaNO_3 + FeSO_4 + H_2SO_4 \rightarrow \left[ Fe \left( H_2O \right)_5 NO \right] SO_4 (Ring complex)$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.

decomposition redox reaction.

- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal



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**436.** 
$$NO + NO_2 \rightarrow N_2O_3$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

## Answer: bd



**437.** 
$$Pb(NO_3)_2 \stackrel{\Delta}{\rightarrow} PbO + NO_2 + O_2$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: d



**438.** 
$$P_4$$
 +  $6Cl_2$   $\xrightarrow{\Delta}$   $PCl_3$ 

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**439.** 
$$P_4 + 10Cl_2 \xrightarrow{\Delta} PCl_5$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

## Answer: cd



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



**441.** 
$$Sn + PCl_5 \rightarrow SnCl_4 + PCl_3$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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$$\begin{array}{c} \Delta \\ \textbf{442.} \ PCl_5 \rightarrow PCl_3 + Cl_2 \end{array}$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

## Answer: d



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



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**444.** 
$$H_3PO_3 \stackrel{\Delta}{\rightarrow} H_3PO_4 + PH_3$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.

decomposition redox reaction.

- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal

### Answer: ad



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$$\mathbf{445.} \, Se_2Cl_2 \, \xrightarrow{\Delta} \, SeCl_4 + Se$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: ad



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



- **447.**  $MnO_2 + NaCl + H_2SO_4(Conc.) \rightarrow MnSO_4 + Cl_2 \uparrow$ 
  - A. For disproportionation reaction.
  - B. For comproportionation reaction.
  - C. For either intermolecular redox reaction or displacement reaction
  - D. For either thermal combination redox reaction or thermal decomposition redox reaction.



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**448.**  $NaBr + MnO_2 + H_2SO_4(Conc.) \rightarrow MnSO_4 + Br_2$ 

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.



- **450.**  $NaI + MnO_2 + H_2SO_4(Conc.) \rightarrow MnSO_4 + I_2 \uparrow$ 
  - A. For disproportionation reaction.
  - B. For comproportionation reaction.
  - C. For either intermolecular redox reaction or displacement reaction
  - D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



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**451.** 
$$NaNO_3 + H_2SO_4(Conc.) \rightarrow Na_2SO_4 + NO_2 \uparrow + O_2 \uparrow$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: d



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: a



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**453.** 
$$3PbS + 8HNO_3(Dil.) \rightarrow 3Pb(NO_3)_2 + 3S \downarrow + 2NO + 4H_2O$$

- A. For disproportionation reaction.
- B. For comproportionation reaction.

decomposition redox reaction.

- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal

#### Answer: c



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**454.**  $S + HNO_3(Dil.) \rightarrow H_2SO_4 + NO \uparrow$ 

- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



- A. For disproportionation reaction.
- B. For comproportionation reaction.
- C. For either intermolecular redox reaction or displacement reaction
- D. For either thermal combination redox reaction or thermal decomposition redox reaction.

#### Answer: c



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## **456.** $2NaOH + Zn(OH)_2$ ↓ → $Na_2ZnO_2 + 2H_2O$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

## Answer: c



**457.** 
$$Mn(OH)_2 + H_2SO_4 \rightarrow MnSO_4 + 2H_2O$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

## Answer: b



**Watch Video Solution** 

- - A. For coloured ppt./Black ppt

**458.**  $2AgNO_3 + 2NaOH → Ag_2O ↓ + 2NaNO_3 + H_2O$ 

- B. For coloured solution.
- C. for clear/colourless solution

Answer: a



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**459.** 
$$Cr(OH)_3 \downarrow + NH_3(Excess) \rightarrow \left[Cr(NH_3)_6\right]^{3+}$$

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

## Answer: b



A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

### Answer: b



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**461.**  $NiCl_2 + NH_3(excess) \rightarrow \left[Ni\left(NH_3\right)_6\right]^{2+}$ 

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

## Answer: b



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**462.** 
$$FeCl_3 + NH_3(excess) \rightarrow Fe(OH)_3 \downarrow$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: a



- **463.**  $Na_2 \left[ Zn(OH)_4 \right] + 4HCl \rightarrow ZnCl_2 + NaCl + H_2O$ 
  - A. For coloured ppt./Black ppt
  - B. For coloured solution.
  - C. for clear/colourless solution

Answer: c



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**464.** 
$$\left[ Cr \left( NH_3 \right)_6 \right]^{3+} + 6HCl \rightarrow Cr^{3+}(aq) + 6NH_4Cl$$

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

## Answer: b



B. For coloured solution.

A. For coloured ppt./Black ppt

C. for clear/colourless solution

D. For white ppt.

Answer: d



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**466.** 
$$4KCN + Fe(CN)_2 \downarrow \rightarrow K_4 \Big[ Fe(CN)_6 \Big]$$

A. For coloured ppt./Black ppt

C. for clear/colourless solution

B. For coloured solution.

D. For white ppt.

Answer: b



**467.** 
$$3KCN + Fe(CN)_3 \downarrow \rightarrow K_3[Fe(CN)_6]$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: b



**468.** 
$$CuSO_4 + KCN(excess) \rightarrow K_3 \left[ Cu(CN)_4 \right] + \frac{1}{2} (CN)_2$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution

Answer: c



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**469.** 
$$K_3[Fe(CN)_6] + FeCl_3 \rightarrow Fe[Fe(CN)_6] \downarrow$$

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

## Answer: b



B. For coloured solution.

A. For coloured ppt./Black ppt

C. for clear/colourless solution

D. For white ppt.

## Answer: a



## **Watch Video Solution**

# **471.** $KI + BiI_2 \downarrow \rightarrow K BiI_4$

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

Answer: b

**472.** 
$$2KI + HgI_2 \downarrow \rightarrow K_2[HgI_4]$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: c



- **473.**  $KI + AgNO_3 \rightarrow AgI \downarrow$ 
  - A. For coloured ppt./Black ppt
  - B. For coloured solution.
  - C. for clear/colourless solution

Answer: a



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- **474.**  $2KI + FeCl_2$  → No reaction.
  - A. For coloured ppt./Black ppt

B. For coloured solution.

- C. for clear/colourless solution
- D. For white ppt.

Answer: b



A. For coloured ppt./Black ppt

B. For coloured solution.

D. For white ppt.

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**476.**  $BaCO_3 \downarrow + CO_2 + H_2O \rightarrow Ba(HCO_3)_2$ 

A. For coloured ppt./Black ppt

C. for clear/colourless solution

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B. For coloured solution.

D. For white ppt.

Answer: c

Answer: d

C. for clear/colourless solution

**477.** 
$$Ba(OH)_2 + CO_2 \rightarrow BaCO_3 \downarrow + H_2O$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: d



**478.** 
$$BaSO_3 \downarrow + SO_2 + H_2O \rightarrow Ba(HSO_3)_2$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution

Answer: c



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- **479.**  $Ba(OH)_2 + SO_2 \rightarrow BaSO_3 \downarrow + H_2O$ 
  - A. For coloured ppt./Black ppt
  - B. For coloured solution.
  - C. for clear/colourless solution
  - D. For white ppt.

Answer: d



A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

**481.**  $Na_2CO_3 + Pb(NO_3)_2 \rightarrow PbCO_3 \downarrow + NaNO_3$ 

D. For white ppt.

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A. For coloured ppt./Black ppt

C. for clear/colourless solution

**Watch Video Solution** 

B. For coloured solution.

D. For white ppt.

Answer: d

Answer: d

**482.** 
$$Na_2CO_3 + KNO_3 \rightarrow No reaction$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: c



- **483.**  $Na_2CO_3 + AgNO_3 \rightarrow Ag_2CO_3 \downarrow + NaNO_3$ 
  - A. For coloured ppt./Black ppt
  - B. For coloured solution.
  - C. for clear/colourless solution

Answer: d



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- **484.**  $Na_3PO_4 + Fe_2(SO_4)_3 \rightarrow FePO_4 \downarrow + Na_2SO_4$ 
  - A. For coloured ppt./Black ppt
  - B. For coloured solution.
  - C. for clear/colourless solution
  - D. For white ppt.

Answer: a



A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

## Answer: b



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**486.**  $CuSO_4(\text{solution}) + ZnCl_2(\text{solution}) \rightarrow \text{No reaction}$ 

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

Answer: b



**487.** 
$$FeSO_4 + Na_2S \rightarrow FeS \downarrow$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: a



- **488.**  $FeCL_3 + KI \rightarrow Fe^{2+}(aq.) + KI_3$ 
  - A. For coloured ppt./Black ppt
  - B. For coloured solution.
  - C. for clear/colourless solution

Answer: b



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- **489.**  $AlCl_3 + Na_3PO_4 \rightarrow AlPO_4 \downarrow$ 
  - A. For coloured ppt./Black ppt
  - B. For coloured solution.
  - C. for clear/colourless solution
  - D. For white ppt.

Answer: d



A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

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**491.**  $Na_{2}CrO_{4} + HCl \rightarrow H_{2}Cr_{2}O_{7} + Na_{2}SO_{4}$ 

A. For coloured ppt./Black ppt

C. for clear/colourless solution

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B. For coloured solution.

D. For white ppt.

Answer: b

Answer: b

**492.** 
$$K_2Cr_2O_7 + NaoH \rightarrow CrO_4^{2-}$$

- A. For coloured ppt./Black ppt
- B. For coloured solution.
- C. for clear/colourless solution
- D. For white ppt.

#### Answer: b



- **493.**  $Na_2CrO_4 + AgF \rightarrow Ag_2CrO_4 \downarrow + NaF$ 
  - A. For coloured ppt./Black ppt
  - B. For coloured solution.
  - C. for clear/colourless solution

Answer: a



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- **494.**  $KMnO_4 + NaNO_3 \rightarrow No reaction$ 
  - A. For coloured ppt./Black ppt
  - B. For coloured solution.
  - C. for clear/colourless solution
  - D. For white ppt.

Answer: b



A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

### Answer: d



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# **496.** $ZnSO_4(solution) + MgCl_2(solution) \rightarrow No reaction$

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.



Answer: c

**497.**  $AgNO_3$ (solution) + NaF(solution)  $\rightarrow$  No reaction.

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

D. For white ppt.

#### Answer: c



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**498.** 
$$(NH_4)_2 SO_4 + Ba(OH)_2 \rightarrow BaSO_4 \downarrow + 2NH_3 \uparrow$$

A. For coloured ppt./Black ppt

B. For coloured solution.

C. for clear/colourless solution

Answer: d



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- **499.**  $(PH_4)_2SO_4 + Sr(OH)_2 \rightarrow SrSO_4 \downarrow + 2NH_3 \uparrow$ 
  - A. For coloured ppt./Black ppt
  - B. For coloured solution.
  - C. for clear/colourless solution
  - D. For white ppt.

Answer: d



**1.** Which of the following metal nitrate produces gaseous product when reacts with KCN solution?

A. 
$$Cu(NO_3)_2$$

$$B.AgNO_3$$

$$C. Cd(NO_3)_2$$

D. 
$$Pb(NO_3)_2$$

#### **Answer: A**



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2. Which of these reaction is correct?

$$A. Cl^- + Br_2 \rightarrow Br^- + Cl_2$$

B. Mohr's salt 
$$\rightarrow NH_3 \mid (g)$$

$$SO_3$$

 $C. K_2 Cr_2 O_7$  solution  $\rightarrow$  Green colour solution

NaOH

Excess NaOH  $D. FeCl_2 \rightarrow (ppt. coloured)$ Soluble complex

**Answer: B** 



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- 3. Compound which on heating produces paramagnetic acidic gas?
  - A.  $Mg(NO_3)_2$ B.  $Fe_2(SO_4)_3$

  - C. FeCO<sub>3</sub>
  - D.  $HgC_2O_4$

## Answer: A



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4. Which compound on heating produces coloured metal oxide finally?

 $A.Al_2(SO_4)_3$ 

C.  $Cu(NO_3)_2$ 

B.  $HgCO_33Hg(OH)_2$ 

**Answer: C** 



5.

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Then salt 'P' in above reaction is:

 $P(\text{Coloured solution}) + BaCl_2 \rightarrow Q \downarrow \text{ (White)} + R(\text{Coloured solution})$ 

**ItBrgt** 

C. CuSO<sub>4</sub>

D. AgNO<sub>3</sub>

B.  $ZnSO_4$ 

**Answer: C** 

**6.** Oxygen gas is not produced from the following decomposition reaction:

A. 
$$K_2Cr_2O_7 \xrightarrow{\Delta}$$
B.  $Ag_2C_2O_4 \xrightarrow{\Delta}$ 
C.  $Pb(NO_3)_2 \xrightarrow{\Delta}$ 

#### Answer: B



**7.** Consider the following reaction and select incorrect statement about gas (P):

$$Zn + HNO_3(Dilute) \rightarrow Zn(NO_3)_2 + P$$

A. Gives neutral solution in water

B. Contains more  $O_2$  than Air

C. Forms brownn ring with  $FeSO_A$  solution

D. None of these

#### **Answer: C**



## **Watch Video Solution**

Which of the following ionic/molecular species does not disproportionate in water at room temperature?

A.  $NO_2$ 

B. *Cu* +

 $C. MnO_4^{2}$ 

D. Ca(Ocl)Cl

Answer: D

9.	Which	halogen	oxidizes	water	at	room	temperature	but	does	not
undergo disproportionation into it?										

A. 
$$F_2$$

B.  $Cl_2$ 

C. *Br*<sub>2</sub>

 $D.I_2$ 

#### **Answer: A**



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**10.** Which of the following combination doen's evolve  ${\it Cl}_2$  gas?

A. 
$$HCl(aq.) + KMnO_4$$

B. 
$$HCl + MnO_2$$

C. 
$$HCl + I_2$$

D. 
$$HCl + F_2$$

### **Answer: C**



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11. Which of the following combination does not liberated  $NH_3$  gas?

A. Heating of  $NH_4ClO_4$ 

B. Heating of NH<sub>4</sub>Cl

 $\mathsf{C.}\left(\mathit{NH}_4\right)_2 CO_{30+\mathit{NaOH}}$ 

 $\mathsf{D.}\,Li_3N+H_2O$ 

### Answer: A



**12.** Which of the following compound on heating does not produce metal oxide?

 $A. MgCl_2 \cdot 6H_2O$ 

 $\mathsf{B.}\, K_2 C r_2 O_7$ 

C. *K*<sub>2</sub>*CO*<sub>3</sub>

D.  $Cu(NO_3)_2$ 

### Answer: C



**13.** Select the compound in which HCl is not the product of Hydrolysis:

A. NCl<sub>3</sub>

VC1<sub>3</sub>

 $B.PCl_3$ 

C. AsCl<sub>3</sub>

D.  $BiCl_3$ 

### Answer: A



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**14.** How many moles of  $H_2{\cal O}$  are liberated when one mole hydrated  ${\it MgCl}_2$ 

is heated?

A. 6

B. 5

C. 4

D. 3

### **Answer: B**



15. Consider the following sequence of reaction:

$$NH_4Cl(s) + \left(NH_4\right)_2CO_3sol.$$
  $CH_3COOH$   $CH_3COOH$   $CH_3COOH$   $CH_3COOH$ 

Which of the following cation can form ppt. Q but does not form ppt. 'R'?

$$A. Mg^{2+}(aq.)$$

B.  $Ca^{2+}(aq.)$ 

 $C. Sr^{2+}(aq.)$ 

D.  $Ba^{2+}(aq.)$ 

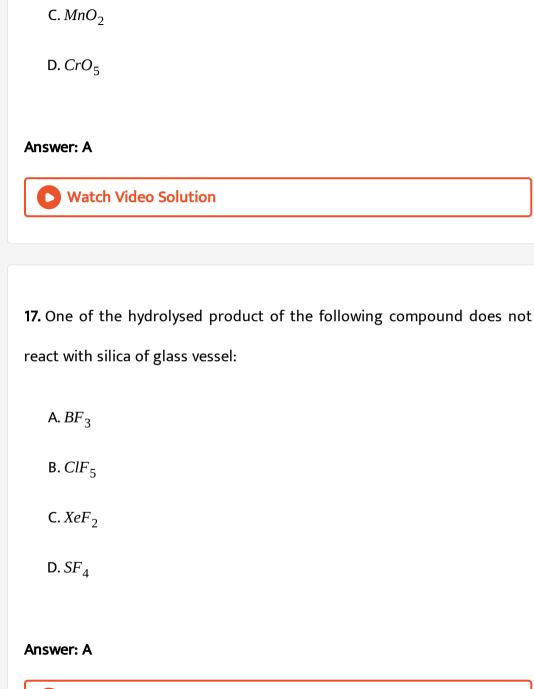
### Answer: D



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16. Which of the following compound does not liberated oxygen gas on warming with conc.  $H_2SO_4$ ?

 $A.SO_3$ 



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 $B.PbO_2$ 

**18.** 
$$M(Salt) + Dil.$$
  $HCl \rightarrow P \downarrow + N \uparrow$ 

gas 'N' changes colour of  $FeSO_4$  solution into yellow solution then salt M in above reaction is

- A.  $BaS_2O_3$
- $\mathsf{B.}\mathit{Ag}_{2}SO_{3}$
- $C. AgNO_2$
- D.  $Pb(NO_3)_2$

### **Answer: C**



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Incorrect statement for Q is:

A. Paramagnetic colourless gas

B. It is oxidized to paramagnetic coloured gas by air

C. It combines with  $Fe_2(SO_4)_3$ 

D. It can be also obtained by disproportionation of  $H\!N\!O_2$ 

### **Answer: C**



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20. In which of the following redox reaction precipitate is not formed?

A. 
$$Cr^{3+}(aq.) + Na_2O_2(Solution) \rightarrow$$

B. 
$$Fe^{3+}(aq.) + (NH_4)_2 S \rightarrow$$

$$C. Mn^{2+}(aq.) + H_2O_2 + NH_3(Solution) \rightarrow$$

D. 
$$Fe^{2+}(aq.) + Na_2O_2(solution) \rightarrow$$

### Answer: A



**21.** Which metal sulphide is soluble in excess  $NH_3$  solution?

A. ZnS

B. MnS

C. FeS

D.  $Cr_2S_3$ 

#### **Answer: D**



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**22.** 
$$I^{-}(aq.) + MnO_{4}^{-}(aq.) \rightarrow X + Mn^{2+}(aq.)$$

Neutral or

 $I^{-}(aq.) + MnO_{4}^{-}(aq.) \rightarrow \text{weakly } OH^{-}Y + MnO_{2}$ 

 $ZnSO_4$  $MnO_4^-(aq.) + Mn^{2+}(aq.) \rightarrow Z + 4H^+$ 

Product X, Y and Z are respectively.

 $A. I_2, IO_3^-, MnO_2$ 

 $B.IO_3$ ,  $I_2$ ,  $MnO_2$ 

$$C. I_2, IO_3, MnO_4^2$$

D. 
$$IO_3^-$$
,  $I_2$ ,  $MnO_4^{2-}$ 

### **Answer: A**



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# **23.** $Br_2 + NaOH \rightarrow Y + Z$

If Y gives precipitate with  $AgNO_3$ , then Z does not undergo reaction with:

A. 
$$Cr^{3+}(aq.)$$

B. 
$$Fe^{2+}(aq.)$$

$$C.Al^{3+}(aq.)$$

D. 
$$Sn^{2+}(aq.)$$

#### **Answer: C**



**24.** 
$$(P) \rightarrow (Q)$$
Metallic solid  $+(R) \uparrow +(S) \uparrow$   
 $\Delta$ 

$$(X) \rightarrow (Y)$$
amphoteric+ $(R) \uparrow + (S) \uparrow$ 

P& X are respectively:

$${\sf A.}\, AgNO_3, LiNO_3$$

B. 
$$AgNO_3$$
,  $Pb(NO_3)_2$ 

C. 
$$Hg_2(NO_3)_2$$
,  $Ca(NO_3)_2$ 

D. 
$$NaNO_3$$
,  $Zn(NO_3)_2$ 

#### **Answer: B**



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# **25.** Iodine is not oxidized to iodic acid/iodicanhydride by:

- A. conc.  $HNO_3$
- B. conc.  $H_2SO_4$
- C. Excess Cl<sub>2</sub> water

Answer: D



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- 26. Colourless gas that has oxidising as well as reducing properties:
  - A.  $CO_2$
  - B. *SO*<sub>2</sub>
  - **C**. *NO*<sub>2</sub>
  - D. *SO*<sub>3</sub>

Answer: B



**27.** 
$$Pb + Dil. HNO_3 \rightarrow P + Q \uparrow + H_2O$$

Incorrect statement for Q is:

- A. Paramagnetic colourless gas
- B. It is oxidized to paramagnetic coloured gas by air
- C. It combines with  $Fe_2(SO_4)_3$
- D. It is also obtained by disproportionation of  $HNO_2$

#### **Answer: C**



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**28.** Which reaction has positive value of  $\Delta G$  °?

A. 
$$F_2 + H_2O \rightarrow 2HF + \frac{1}{2}O_2$$

$$B. Cl_2 + H_2O \rightarrow HCl + HOCl$$

$$C. Br_2 + H_2O \rightarrow HBr + HOBr$$

$$\begin{array}{c} R.T. \\ \text{D.}\, I_2 + H_2O \ \rightarrow \ HI + HOI \end{array}$$

**Answer: D** 



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29. Which does not undergo comproportionation reaction?

$$A. H_2S + SO_2 \rightarrow$$

$$C. K_2MnO_4 + H^+(aq.) \rightarrow$$

B.  $I^{-}(aq.) + IO_{3}^{-}(aq.) + H^{+}(aq.) \rightarrow$ 

$$D. MnO_4^- + Mn^{2+}(aq.) \rightarrow$$

# **Answer: C**



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30. Select the incorrect match:

A. 
$$Fe^{3+} + \left[ Fe(CN)_6 \right]^{4-} \rightarrow \text{Blue colour ppt.}$$

B. 
$$Fe^{3+} \left[ Fe(CN)_6 \right]^{3-} \rightarrow \text{Red brown colouration}$$
C.  $Fe^{2+} + \left[ Fe(CN)_6 \right]^{3-} \rightarrow \text{Blue colour ppt.}$ 

D. 
$$Fe^{2+} + \left[ Fe(CN)_6 \right]^{4-} \rightarrow \text{Red brown colouration}$$

### **Answer: D**



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31. 
$$Cu^{2+}(aq.) + X^{-}(aq.) \rightarrow CuX \vee + X_{2}$$

$$D. SCN^{-}(aq.)$$

# **Answer: A**



**32.** In which of the following reaction  $SO_2$  gas is not produced?

**33.** Which metal gives  $NH_4NO_3$ , when react with dilute  $HNO_3$  acid?

warm

A. 
$$S_8$$
 + conc.  $H_2SO_4$   $\rightarrow$ 

$$B. S_8 + conc. \quad HNO_3 \rightarrow$$

C. 
$$PbS + O_2 \xrightarrow{\Delta}$$

D. 
$$FeS_2 + O_2 \rightarrow$$

### **Answer: B**



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A. Zn

B. *Pb* 

C. Cu

**Answer: A** 



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- **34.** Select the salt whose aqueous solution is not green:
  - A.  $FeSO_4$
  - $\mathsf{B.}\mathit{CrCl}_3$
  - $C. NiCl_2$
  - D.  $MnCl_2$

Answer: D



**35.** Select the ion exchange reaction, which proceeds to forward direction in aqueous medium:

Aqueous

A. 
$$2AgCl + CaF_2 \rightarrow 2AgF + CaCl_2$$

Aqueous

B.  $BaSO_4 + 2NaOH \rightarrow Ba(OH)_2 + Na_2SO_4$ 

Aqueous

$$C. Pb(NO_3)_2 + 2CH_3COONa \rightarrow Pb(OAc)_2 + 2NaNO_3$$

 $\mathsf{D}.\, \mathit{Na}_{2}\mathit{CrO}_{4} + \mathit{BaCl}_{2} \quad \rightarrow \quad \mathit{BaCrO}_{4} + 2\mathit{NaCl}$ 

### **Answer: D**



**36.** Which of the following metal hydroxide is not soluble in exces of  $NH_3$  solution?

A. 
$$Fe(OH)_2$$

$$C. Cd(OH)_2$$

D.  $Cu(OH)_2$ 

**Answer: A** 



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**37.** Which of the following combination of reagents does not undergo redox reaction in aqueous medium?

$$A. SnCl_2 + HgCl_2$$

$$B. CuSO_4 + KCN$$

$$C.Pb(CH_3COO)_2 + KI$$

$$\mathsf{D.} Ag_2O + SO_2$$

**Answer: C** 



**38.**  $K_4[Fe(CN)_6] + M^{\chi+}(aq.) \rightarrow M_4[Fe(CN)_6]_{\chi} \downarrow$  Coloured precipitate

Which of the following cation does not respond to the above reaction?

- A.  $Cu^{2+}(aq.)$
- B.  $Fe^{3+}(aq.)$
- $C. Zn^{2+}(aq.)$
- D. None of these

#### Answer: C



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**39.** Sodium salt solution  $+AgNO_3$ soln.  $\rightarrow$  Coloured precipitate.

solution then which of the following anion is present in the salt solution?

If coloured precipitate is soluble in both dil. HNO3 and excess conc. NH3

- A.  $S^{2-}(aq.)$
- $B.I^{-}(aq.)$

C.	$PO_4^{3-}(a_0^{3-})$	q.
D.	Br⁻(aq.	)

## Answer: C



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# **40.** Chlorine gas is not produced by heating:

A. SOCl<sub>2</sub>

B.  $PbCl_{4}$ 

 $C. FeCl_3$ 

D.  $Hg_2Cl_2$ 

# **Answer: D**



**41.** Which of the following anion does not produce prepitate with  $BaCl_2$ solution however gives precipitate with AgNO<sub>3</sub>?

A. 
$$CO_3^{2-}(aq.)$$

$$C. MnO_{\Lambda}^{-}(aq.)$$

B.  $C_2O_4^{2-}(aq.)$ 

D. 
$$S^{2-}(aq.)$$

### **Answer: D**



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- **42.** Which of the following compound is completely water soluble?
- A.  $BaSO_A$ 
  - B.  $Ba(OH)_2$

 $C.Al(OH)_3$ 

D.  $CaF_2$ 

#### **Answer: B**



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**43.** Which chemical reaction contains incorrect products?

A. 
$$SnSO_4 \rightarrow SnO_2 + SO_3 \uparrow + SO_2 \uparrow$$

$$B.Ag_2C_2O_4 \xrightarrow{\Delta} Ag + CO_2 \uparrow$$

$$C.P_4O_{10}(s) + CaO(s) \stackrel{\Delta}{\rightarrow} Ca_3(PO_4)_2$$

$$D. PbCl_4 \rightarrow PbCl_2 + Cl_2 \uparrow$$

### Answer: A



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**44.** Which of the following compound undergoes disproportionation in presence of  $SO_3$  gas?

A. 
$$K_2MnO_4$$

$$B. K_2 Cr O_4$$

$$\mathsf{C}.\,I_2$$

D. 
$$Mg(NO_3)_2$$

### **Answer: A**



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# **45.** Consider the following reaction:

$$K_4 \left[ Fe(CN)_6 \right]$$

X(aq.)  $\rightarrow$  Chocolate brown ppt.

$$AgNO_3$$

 $X(aq.) \rightarrow \text{White ppt. (insoluble in dil. } HNO_3)$ 

Then 'X' will be:

A. 
$$ZnSO_4$$

B. 
$$CuCl_2$$

C. 
$$FeSO_4$$

**Answer: B** 



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- 46. Which of the following reagent does not oxidize HCl?
  - A.  $PbO_2$
  - B. conc.  $H_2SO_4$
  - $C. MnO_2$
  - $D. K_2 Cr_2 O_7 / H^{-1}$

Answer: B



47. Select correct match:

### Anions

- (a)  $CO_3^{2-}$ ,  $SO_3^{2-}$
- (b) CO<sub>3</sub><sup>2-</sup>, HCO<sub>3</sub>
- (c)  $SO_3^{2-}$ ,  $SO_4^{2-}$

(d) Cl -, Br -

- Separated by reagent
  - BaCl<sub>2</sub>
  - CaCl
  - (CH<sub>3</sub>COO)<sub>2</sub>Pb AgNO,



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48. Which of the following compound does not produce green coloured product on thermal decomposition?

- A.  $K_2Cr_2O_7$
- B.  $KMnO_{\Lambda}$
- $C. (NH_4)_2 Cr_2 O_7$
- D.  $NH_4NO_3$

Answer: D



**49.** Aqueous solution of  $FeSO_4$  does not produce precipitate with:

A. NaOH

 $B. NH_3$  solution

 $C. Na_2CO_3$ 

D. None of these

#### **Answer: D**



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## **50.** Comproportionationn occurs between:

A. 
$$Cl^{-}(aq.) + ClO^{-}(aq.) + OH^{-}(aq.)$$

 $B. PH_3(g) + H_3PO_4 \text{ acid}$ 

 $C. Na_2S(aq.) + Na_2SO_3(aq.)$ 

D.  $MnO_4^-(aq.) + Mn^{2+}(aq.) + ZnSO_4(aq.)$ 

### **Answer: D**



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# **51.** Colour of $CrO_4^{2-}$ (aq.) is not changed by

A. dil. HCl

 $B.NH_3$  solution

C. CH<sub>3</sub>COOH

 $D.NO_2$  gas

#### Answer: B



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**52.** 
$$Mg_3N_2(s) + H_2O \rightarrow P \downarrow + Q \uparrow$$

Excess 'Q' gas does not form coloured complex with:

$$B.Zn^{2+}(aq.)$$

C.  $Cr^{3+}(aq.)$ 

A.  $Ni^{2+}(aq.)$ 

D.  $Cu^{2+}(aq.)$ 

### **Answer: B**



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NaOH solution?

A. 
$$Fe^{3+}(aq.) + Zn^{3+}(aq.)$$

53. Which of the following pair of cations can be separated by excess

B.  $Mn^{2+}(aq.)$ ,  $Cd^{2+}(aq.)$ 

 $C. Mq^{2+}(aq.), Hq^{2+}(aq.)$ 

D.  $Al^{3+}(aq.)$ ,  $Cr^{3+}(aq.)$ 

# Answer: A

### **54.** Consider following reaction:

$$Cl_2(g) + H_2O \rightarrow P + Q$$

If molecular weight of P is less than Q then incorrect statement is:

- A. On warming 'P' can form deep red coloured vapours with  ${\it CrO}_3$
- B. Q' exhibits bleaching property
- ${\rm C.}\,{\it MnO}_2$  can change 'P' into  ${\it Cl}_2$  gas on warming
- D. P' reacts with  $H_2S$  gas while 'Q' does not

#### **Answer: D**



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**55.** Which of the following reagent can dissolves precipitate of  $HgS \downarrow$ 

A.  $NH_3$  solution

B. conc. HCl

C. conc.  $HNO_3$ 

D.  $Na_2S$  solution

### **Answer: D**



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### **56.** Which of the following reaction is incorrect?

$$\mathsf{A.}\ PCl_3 + 3H_2O \ \rightarrow \ H_3PO_3 + 3HCl$$

$$\mathsf{B.}\,\mathit{NCl}_3 + 3H_2O \,\,\rightarrow\,\, \mathit{NH}_3 + 3HOCl$$

$$\mathsf{C.}\,\mathit{SbCl}_3 + 3H_2O \,\rightarrow\, H_2\mathit{SbO}_3 + 3HCl$$

$$D. BiCl_3 + H_2O \rightarrow BiOCl + 2HCl$$

### **Answer: C**



### 57. Concentrated sodium hydroxiide can separate a mixture of:

- A.  $Al^{3+}$  and  $Cr^{3+}$
- B.  $Cr^{3+}$  and  $Fe^{3+}$
- $C.Al^{3+}$  and  $Zn^{2+}$
- D.  $Zn^{2+}$  and  $Pb^{2+}$

#### **Answer: B**



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**58.** Select correct set of species which can't react with water but react with NaOH,

- (i) *NO*<sub>2</sub>
- (ii) *P*<sub>4</sub>
- (iii) Al
- (iv)  $I_2$

A. Only (iv)

B. (iii) and (iv)

C. (ii), (iii) and (iv)

D. all (i), (ii), (iii) and (iv)

### **Answer: C**



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# **59.** Fe(Finely powdered)+HCl(dil.) $\rightarrow P + Q \uparrow$

Compound 'P' does not precipitate with:

 $A. AgNO_3$ 

 $B. K_3 [Fe(CN)_6]$ 

 $C. \left( NH_4 \right)_2 S$ 

 $\mathsf{D.}\,NH_4Cl + NH_4OH$ 

# Answer: D

**60.** Which combination gives maximum number of products?

A. 
$$P_4$$
 +  $SOCl_2$ 

$$\mathsf{B.}\, P_4 + SO_2Cl_2$$

$$C. XeF_4 + H_2O$$

D.  $NH_4NO_3 + Zn +$  Excess Excess NaOH

### **Answer: C**



**61.**  $Cu^{2+}(aq.)$  does not undergo redox reaction with solution:

A. 
$$\left(NH_4\right)_2 S$$

$$B. Na_2S_2O_3$$

### Answer: A



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- **62.** Hydrolysis of which of the following compound liberates acidic gas?
  - A. Li<sub>2</sub>NH
  - $\mathsf{B.}\mathit{Al}_2S_3$
  - C.  $CaC_2$
  - D. CaNCN

#### **Answer: B**



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**63.** The non-metal which does not react with water but reacts with alkali?

A. Boron

B. Bromine

 $C.P_A$ 

D. Fluorine

#### **Answer: C**



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- **64.** A very dilute acidic solution of  $Cd^{2+} \& Ni^{2+}$  gives only yelllwo ppt. of CdS on passing  $H_2S$ , this is due to:
  - A. solubility product  $\left(K_{sp}\right)$  of CdS is more than that of NiS.
  - B. Solubility product  $(K_{sp})$  of CdS is less than that of NiS.
  - C.  $Cd^{2+}$  belong to II B group while  $Ni^{2+}$  belongs to IVth group
  - D. CdS is insoluble in yellow ammonium sulphide (YAS).

### Answer: B

**65.** Thermal decomposition of which of the salt listed below yield a basic and acidic oxides simultaneously?

A.  $NH_4ClO_4$ 

 $\mathsf{B.}\,\mathit{CaCO}_3$ 

 $\mathsf{C.}\,\mathit{NanO}_3$ 

 $D.NH_4NO_2$ 

### **Answer: B**



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**66.** What are formed products, when aqueous solution of  $CuCl_2$  and  $\left(NH_4\right)_2S$  are mixed?

A. CuS(aq.) and  $NH_4Cl(s)$ 

**67.** Which of the following compound does not react with cold and dil.  $HNO_3$ ?

A. PbO

B.  $PbO_2$ C.  $FeSO_4$ D.  $PbCl_2$ 

B. CuS(s) and  $NH_4Cl(aq.)$ 

C. CuS(aq.) and  $NH_ACl(g)$ 

D. CuS(s) and  $NH_4Cl(s)$ 

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**Answer: B** 

**Answer: B** 

**68.** The incorrect order of solubility in water is:

A. 
$$Ca(OH)_2 < Sr(OH)_2 < Ba(OH)_2$$

$$\mathsf{B.}\, Li_2CO_3 \leq Na_2CO_3 \leq K_2CO_3$$

$$C. CsNO_3 < RbNO_3 < KNO_3$$

D. 
$$BeS_2O_3 < MgS_2O_3 < CaS_2O_3$$

### **Answer: D**



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**69.** The correct order of increasing solubility in water is:

A. KF < NaF < LiF

 $B. NaHCO_3 < KHCO_3 < RbHCO_3$ 

 $\mathsf{C.}\,K_2\mathsf{CO}_3 < \mathit{Na}_2\mathsf{CO}_3 < \mathit{Li}_2\mathsf{CO}_3$ 

 $D. LiNO_3 < NaNO_3 < KNO_3$ 



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**70.** Bromine is commercially prepared from sea water by displacement reaction

$$Cl_2 + 2Br^-(aq.) \rightarrow 2Cl^-(aq.) + Br_2$$

 $\mathit{Br}_2$  gas thus formed is dissolved into solution of  $\mathit{Na}_2\mathit{CO}_3$  and then pure

 $\mathit{Br}_2$  iis obtained by treatment of the solution with :

- A.  $Ca(OH)_2$
- B. NaOH
- $C.H_2SO_4$
- D. HI

**Answer: C** 



71. Which of the following metal on burning in moist air does not give
smel of ammonia?
A. Mg
B. Ca
C. K
D. Li
Answer: C
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O material reconstruction
72. Gas that can not be collected over water is:
72. Gas that can not be collected over water is:
<b>72.</b> Gas that can not be collected over water is: $A.  N_2$

### Answer: C



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## 73. Compound having lowest thermal stability is:

- A.  $NaHCO_3$
- B.  $KHCO_3$
- C. RbHCO<sub>3</sub>
- D. CsHCO<sub>3</sub>

### **Answer: A**



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**74.** Which of the following statement is incorrect regarding  $Fe^{2+}$  and  $Fe^{3+}$  cations?

A.  $Fe^{3+}$  gives brown colour solution with potassium ferricyanide

B.  $Fe^{2+}$  gives blue precipitate with potassium ferricyanide

 $C. Fe^{3+}$  gives red colour solution with potassium thiocyanate

D.  $Fe^{2+}$  gives brown colour with ammonium thiocyanate

### Answer: D



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**75.**  $(NH_4)_2 Cr_2 O_7$  on heating liberates a gas. The same gas will be obtained by

A. Heating  $NH_4NO_2$ 

B. Heating NH<sub>4</sub>NO<sub>3</sub>

C. Heating  $(NH_4)_2SO_4$ 

D. Treatment  $Mg_3N_2$  with  $H_2O$ 

Answer: A

**76.** Which of the following compound liberates acidic gas during its

A.  $Ca_3P_2$ 

B.AIN

hydrolysis?

 $C.Al_2S_3$ 

D.  $CaH_2$ 

### **Answer: C**



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**77.** Which of the following combination does not evolve  $Cl_2$  gas?

A.  $HCl(aq.) + KMnO_4$ 

B.  $HCl + MnO_2$ 

$$C.HCl + Br_2$$

D. 
$$HCl + F_2$$

### **Answer: C**



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## **78.** NH<sub>3</sub> gas does not liberate by which of the following combination?

A. Heating of  $NH_4ClO_4$ 

B. Heating of NH<sub>4</sub>Cl

 $C. (NH_4)_2 CO_3 + NaOH$ 

 $D. Li_3N + H_2O$ 

### Answer: A



**79.** If salt Q undergoes redox reaction with  $H_2S$  in acidic medium then which of the following species can not be possible product?

- A.  $MnO_4^{2-}(aq.)$
- $\mathsf{B.}\,\mathcal{S}$
- $C. MnO_2$
- D. both (a) and (c)

### **Answer: D**



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Heat 
$$Cr_2O_7^{2-}/H^+$$

**80.** Metal sulphate  $(A) \rightarrow \text{oxide}(B) + gas(C) + gas(D) \rightarrow \text{Gree}$ 

 $Na_2O_2$ 

solution  $\rightarrow$  *ExcessE*yellow solution

Compound A, B, C, D are E are respectively:

 $\mathsf{A.FeSO}_4, \mathit{Fe}_2\mathsf{O}_3, \mathit{SO}_3, \mathit{SO}_2, \mathit{Na}_2\mathit{CrO}_4$ 

 $B.Al_2(So_4)_3, Al_2O_3, SO_3, SO_2, Na_2CrO_4$ C. CuSO<sub>4</sub>, CuO, SO<sub>3</sub>, SO<sub>2</sub>, NaCrO<sub>4</sub>

D.  $ZnSO_A$ ,  $ZnO_2$ ,  $SO_3$ ,  $SO_2$ ,  $Na_2CrO_A$ 

81. Which of the following radical does not liberate gas with (Zn+dil. HCl)

## Answer: A



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on warming?

A.  $S^{2}$ 

B.  $SO_3^{2-}$ 

 $C. NO_3^{2-}$ 

D. CH<sub>3</sub>COO -



**Answer: C** 

**82.** Which of the following cation does not give precipitate with  $H_2S$  in neutral medium?

- A.  $Fe^{3+}$
- B. *Cu*<sup>2+</sup>
- C.  $Bi^{3+}$
- D.  $Ag^+$

### **Answer: A**



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**83.**  $NaCl(solid) + K_2Cr_2O_7(solid) + conc. H_2SO_4 \rightarrow \text{Reddish brown fumes}$  of 'X'.

The oxidation state of central atom in compound 'X' is:

A. + 6



**C**. + 2

D. zero

### Answer: A



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## 84. Diamagnetic gas neutral towards water is:

A.  $N_2O$ 

 $B.NO_2$ 

C. NO

D.  $N_2O_3$ 

### **Answer: A**



**85.** Which of the following reagent can be used to separate *AgCl* and *AgI*?

A. dil.  $HNO_3$ 

B. NH<sub>4</sub>OH solution

C. KCN solution

D.  $Na_2S_2O_3$  solution

### **Answer: B**



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**86.** When  $PbO_2$  reacts with conc.  $HNO_3$  then evolved gas is:

A.  $NO_2$ 

 $\mathsf{B.}\,O_2$ 

 $\mathsf{C.}\,N_2$ 

 $\mathsf{D}.\,N_2O$ 

### **Answer: B**



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**87.** In a closed container there is a mixture of  $SO_2$ ,  $CO_2$  and  $O_2$  gas, which sequence of reagent can be helpful to separate them ?

- (I) Limewater
- (II) Acidified potassium dichromate
- (III) Alkaline pyragallol.
  - A. (I),(II) and (III)
  - B. (II), (I), (III)
  - C. (III),(II), (I)
  - D. (III), (I), (II)

### **Answer: B**



88. Which salt is colourless? A.  $KMnO_{\Lambda}$ B.  $BaSO_A$ C. Na2CrO<sub>4</sub> D. CoCl<sub>2</sub> **Answer: B Watch Video Solution** 89. Which of the following Xenon compound does not produce explosive XeO<sub>3</sub> on its complete hydrolysis? A.  $XeO_2F_2$ B.  $XeF_2$  $C. XeF_{4}$ D.  $XeF_6$ 

### Answer: B



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**90.**  $FeSO_4.7H_2O$  (Green vitriol) salt on thermal decomposition does not produce:

- $A.SO_2$
- $B.O_2$
- $C.SO_3$
- D.  $H_2O$  vapour

### **Answer: B**



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 $BaCl_2$ **91.**  $X(aq) + Na_2O_2 \rightarrow Y(aq.) \rightarrow Z \downarrow$  Insoluble in dil. HCl

X and Y are different sodium salts, then anion present in the salt (X) is:

A.  $Hg_2Cl_2$ B. FeCl<sub>2</sub>  $C. S_2Cl_2$ D.  $BCl_3$ 

A.  $Cr_2O_7^{2-}$ 

B.  $C_2O_4^{2-}$ 

 $c. SO_3^{2-}$ 

D.  $SO_4^{2-}$ 

**Answer: C** 

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**92.** Which of the following chloride does not react with  $PCl_5$  on heating?

### Air

KOH

 $P(\text{soln.})(\text{Coloured}) \rightarrow Q(\text{soln.})(\text{Coloured}) \rightarrow R \downarrow (ppt.)$  (Insoluble in both excess NaOH a then P contains:

 $\begin{array}{c|c} Pb\left(CH_3COO\right)_2 \\ \textbf{94.} X_2S_n + water \rightarrow X(OH)_n & + Y \uparrow (Gas) \rightarrow Z \downarrow \text{ (Black ppt.)} \end{array}$ 

C. 
$$Cr^{2+}(aq.)$$

B.  $Fe^{2+}(aq.)$ 

$$D. Ni^{2+}(aq.)$$

### **Answer: B**



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Then (X) cation can not be:

A. 
$$Fe^{3+}$$

B.  $Al^{3+}$ 

C.  $Cr^{3+}$ 

D.  $Mg^{2+}$ 

### **Answer: A**



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# **95.** $X(\text{satl}) + AgNO_3(aq.) \rightarrow Y \downarrow (\text{yellow ppt.})$ (soluble in excess of $NH_3$ solution)

Salt X, does not contain:

A. 
$$PO_4^{3}$$

B. Br⁻

 $C.I^-$ 

D.  $AsO_3^{3}$ 

### **Answer: C**



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### Excess

**96.**  $M^{n+}(aq.) + KI \rightarrow X \downarrow ppt. \rightarrow KI$  ppt. remains insoluble in excess KI solution. Then cation  $M^{n+}(aq.)$  can be:

A. 
$$Pb^{2+}(aq.)$$

B. 
$$Cu^{2+}(aq.)$$

C. 
$$Bi^{3+}(aq.)$$

$$D. Hg^{2+}(aq.)$$

### Answer: B



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**97.** Aqueous solution of which of the following cation gives precipitate with potash alum?

A.  $H_2O_2$ B.  $Sn^{2+}(aq.)$ C. HFD. HBrAnswer: C

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**98.** Colour of acidified  $K_2Cr_2O_7$  is not changed by:

# Answer: C Watch Video Solution

A.  $Cu^{2+}(aq.)$ 

B.  $Zn^{2+}(aq.)$ 

C.  $Ba^{2+}(aq.)$ 

D.  $Ni^{2+}(aq.)$ 

99. Which of the following metal nitrate produces gaseous product when reacts with KCN solution?

A. 
$$Cu(NO_3)_2$$

- $B.AgNO_3$
- C.  $Cd(NO_3)_2$ D.  $Pb(NO_3)_2$

### Answer: A



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100. Which of these reaction is correct?

$$A. Cl^- + Br_2 \rightarrow Br^- + Cl_2$$

B. Mohr's salt 
$$\rightarrow NH_3 \uparrow (g)$$

 $SO_3$  $C. K_2 Cr_2 O_7$  solution  $\rightarrow$  Green colour solution

NaOH Excess NaOH  $D. FeCl_2 \rightarrow (ppt. coloured) \rightarrow$ Soluble complex

### **Answer: B**



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### 101. Compound which on heating produces paramagnetic acidic gas?

- A.  $Mg(NO_3)_2$ B.  $Fe_2(SO_4)_3$
- $C.FeCO_3$
- D.  $HgC_2O_4$

### Answer: A



**102.** Which compound on heating produces coloured metal oxide finally?

$$A.Al_2(SO_4)_3$$

B.  $HgCO_33Hg(OH)_2$ 

C.  $Cu(NO_3)_2$ 

D. *Ba*(*OH*)<sub>2</sub>

### Answer: C



# **103.** $P(\text{Coloured solution}) + BaCl_2 \rightarrow Q \downarrow (\text{White}) + R(\text{Coloured solution})$ **ItBrgt**

Then salt 'P' in above reaction is:

A. 
$$Na_2CrO_4$$

 ${\sf B.}\, {\it ZnSO}_4$ 

C. CuSO<sub>4</sub>

D.  $AgNO_3$ 

### **Answer: C**



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**104.** Oxygen gas is not produced from the following decomposition reaction:

$$A. K_2 Cr_2 O_7 \xrightarrow{\Delta}$$

$$\text{B.} Ag_2C_2O_4 \overset{\Delta}{\rightarrow}$$

$$C. Pb(NO_3)_2 \stackrel{\Delta}{\rightarrow}$$

$$D. Ag_2CO_3 \rightarrow$$

### **Answer: B**



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**105.** Consider the following reaction and select incorrect statement about gas (P):

$$Zn + HNO_3(Dilute) \rightarrow Zn(NO_3)_2 + P$$

- A. Gives neutral solution in water
- B. Contains more  $O_2$  than Air
- C. Forms brownn ring with  $FeSO_4$  solution
- D. None of these

### Answer: C



**106.** Which of the following ionic/molecular species does not disproportionate in water at room temperature?

- **A.** *NO*<sub>2</sub>
- B. *Cu* +
- $C. MnO_4^2$
- D. Ca(OCl)Cl

### Answer: D



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**107.** Which halogen oxidizes water at room temperature but does not undergo disproportionation into it?

- $A.F_2$
- B.  $Cl_2$
- $C. Br_2$
- $D.I_2$

### **Answer: A**



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**108.** Which of the following combination does not evolve  $Cl_2$  gas?

A.  $HCl(aq.) + KMnO_4$ 

B.  $HCl + MnO_2$ 

 $C.HCl + I_2$ 

D.  $HCl + F_2$ 

## Answer: C



A. Heating of  $NH_4ClO_4$ 

B. Heating of NH<sub>4</sub>Cl

 $\mathsf{C.}\left(\mathit{NH}_4\right)_2 \mathit{CO}_{30+\mathit{NaOH}}$ 

109. Which of the following combination does not liberated  $NH_3$  gas?

 $D. Li_3N + H_2O$ 

**Answer: A** 

**110.** Which of the following compound on heating does not produce metal oxide?

- $\text{A.}\,\textit{MgCl}_2\cdot \textit{6H}_2\textit{O}$
- $\mathsf{B.}\, K_2 C r_2 O_7$
- $C. K_2CO_3$
- D.  $Cu(NO_3)_2$

### Answer: C



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**111.** Select the compound in which HCl is not the product of Hydrolysis:

- A.  $NCl_3$
- $\mathsf{B.}\mathit{PCl}_3$
- $\mathsf{C}.\mathit{AsCl}_3$

D. $BiCl_3$	
-------------	--

### **Answer: A**



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- 112. How many moles of  $H_2\mathcal{O}$  are liberated when one mole hydrated  $MgCl_2$  is heated?
  - A. 6
  - B. 5
  - C. 4
  - D. 3

### **Answer: B**



113. Consider the following sequence of reaction:

$$NH_4Cl(s) + (NH_4)_2CO_3sol.$$
  $CH_3COOH$   $CH_3COOH$   $CH_3COOH$   $CH_3COOH$ 

Which of the following cation can form ppt. Q but does not form ppt. 'R'?

$$A. Mg^{2+}(aq.)$$

B.  $Ca^{2+}(aq.)$ 

 $C. Sr^{2+}(aq.)$ 

D.  $Ba^{2+}(aq.)$ 

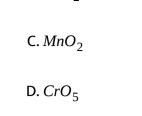
### Answer: D



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114. Which of the following compound does not liberated oxygen gas on warming with conc.  $H_2SO_4$ ?

 $A.SO_3$ 



 $B.PbO_2$ 

### Answer: A



115. One of the hydrolysed product of the following compound does not react with silica of glass vessel:

A.  $BF_3$ 

B. ClF<sub>5</sub>

 $C. XeF_2$ 

D.  $SF_4$ 

# Answer: A



116. 
$$M(Salt) + Dil. HCl \rightarrow P + Q + H_2O$$

gas 'Q' changes colour of  $FeSO_4$  solution into yellow solution then salt M in above reaction is

- A.  $BaS_2O_3$
- $\mathsf{B.}\mathit{Ag}_{2}\mathit{SO}_{3}$
- $\mathsf{C}.\mathit{AgNO}_2$
- D.  $Pb(NO_3)_2$

### **Answer: C**



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**117.** 
$$Pb + dil.$$
  $HNO_3 \rightarrow P + Q \uparrow + H_2O$ 

incorrect statement for Q is:

A. Paramagnetic colourless gas

B. It is oxidized to paramagnetic coloured gas by air

C. It combines with  $Fe_2(SO_4)_3$ 

D. It can be also obtained by disproportionation of  $H\!N\!O_2$ 

### **Answer: C**



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118. In which of the following redox reaction precipitate is not formed?

A. 
$$Cr^{3+}(aq.) + Na_2O_2(Solution) \rightarrow$$

B. 
$$Fe^{3+}(aq.) + (NH_4)_2 S \rightarrow$$

C. 
$$Mn^{2+}(aq.) + H_2O_2 + NH_3(Solution) \rightarrow$$

D. 
$$Fe^{2+}(aq.) + Na_2O_2(solution) \rightarrow$$

### Answer: A



119. Which metal sulphide is soluble in excess  $NH_3$  solution?

A. ZnS

B. MnS

C. FeS

D.  $Cr_2S_3$ 

### **Answer: D**



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**120.** 
$$I^{-}(aq.) + MnO_{4}^{-}(aq.) \rightarrow X + Mn^{2+}(aq.)$$

Neutral or

 $I^{-}(aq.) + MnO_{4}^{-}(aq.) \rightarrow \text{weakly } OH^{-}Y + MnO_{2}$ 

ZnSO<sub>4</sub>

 $MnO_4^-(aq.) + Mn^{2+}(aq.) \rightarrow Z + 4H^+$ 

Product X, Y and Z are respectively.

A.  $I_2$ ,  $IO_3$ ,  $MnO_2$ 

 $B.IO_3$ ,  $I_2$ ,  $MnO_2$ 

$$C. I_2, IO_3, MnO_4^2$$

D. 
$$IO_3^-$$
,  $I_2$ ,  $MnO_4^{2-}$ 

### Answer: A



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## **121.** $Br_2 + NaOH \rightarrow Y + Z$

If Y gives precipitate with  $AgNO_3$ , then Z does not undergo reaction with:

A. 
$$Cr^{3+}(aq.)$$

B. 
$$Fe^{2+}(aq.)$$

$$C.Al^{3+}(aq.)$$

$$D. Sn^{2+}(aq.)$$

### **Answer: C**



**122.** 
$$(P) \rightarrow (Q)$$
Metallic solid  $+(R) \uparrow + (S) \uparrow$ 

$$(X) \rightarrow (Y)$$
amphoteric+ $(R) \uparrow + (S) \uparrow$ 

P& X are respectively:

$$A. AgNO_3, LiNO_3$$

B. 
$$AgNO_3$$
,  $Pb(NO_3)_2$ 

$$C. Hg_2(NO_3)_2, Ca(NO_3)_2$$

D. 
$$NaNO_3$$
,  $Zn(NO_3)_2$ 

### **Answer: B**



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# **123.** Iodine is not oxidized to iodic acid/iodicanhydride by:

- A. conc.  $HNO_3$
- B. conc.  $H_2SO_4$
- C. Excess  $Cl_2$  water

Answer: D



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- **124.** Colourless gas that has oxidising as well as reducing properties:
  - A.  $CO_2$
  - B. *SO*<sub>2</sub>
  - **C**. *NO*<sub>2</sub>
  - D. *SO*<sub>3</sub>

Answer: B



$$125. Pb + Dil. HNO_3 \rightarrow P + Q \uparrow + H_2O$$

Incorrect statement for Q is:

- A. Paramagnetic colourless gas
- B. It is oxidized to paramagnetic coloured gas by air
- C. It combines with  $Fe_2(SO_4)_3$
- D. It is also obtained by disproportionation of  $HNO_2$

### **Answer: C**



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**126.** Which reaction has positive value of  $\Delta G$  °?

A. 
$$F_2 + H_2O \rightarrow 2HF + \frac{1}{2}O_2$$

$$\mathsf{B.} \ Cl_2 + H_2O \ \rightarrow \ HCl + HOCl$$

$$C. Br_2 + H_2O \rightarrow HBr + HOBr$$

$$\begin{array}{c} R.T. \\ D.I_2 + H_2O \rightarrow HI + HOI \end{array}$$

### **Answer: D**



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# 127. Which does not undergo comproportionation reaction?

$$A. H_2 S + SO_2 \rightarrow$$

$$C. K_2MnO_4 + H^+(aq.) \rightarrow$$

B.  $I^{-}(aq.) + IO_{3}^{-}(aq.) + H^{+}(aq.) \rightarrow$ 

$$D. MnO_4^- + Mn^{2+}(aq.) \rightarrow$$

# **Answer: C**



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128. Select the incorrect match:

A. 
$$Fe^{3+} + \left[ Fe(CN)_6 \right]^{4-} \rightarrow \text{Blue colour ppt.}$$

B. 
$$Fe^{3+} \left[ Fe(CN)_6 \right]^{3-} \rightarrow \text{Red brown colouration}$$
C.  $Fe^{2+} + \left[ Fe(CN)_6 \right]^{3-} \rightarrow \text{Blue colour ppt.}$ 

D. 
$$Fe^{2^+} + \left[ Fe(CN)_6 \right]^{4^-} \rightarrow \text{Red brown colouration}$$

# **Answer: D**



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**129.** 
$$Cu^{2+}(aq.) + X^{-}(aq.) \rightarrow CuX \vee + X_{2}$$

'X' cannot be:

 $B.I^{-}(aq.)$ 

# **Answer: A**



**130.** In which of the following reaction  $SO_2$  gas is not produced?

A. 
$$S_8$$
 + conc.  $H_2SO_4$   $\rightarrow$ 

warm

B. 
$$S_8$$
 + conc.  $HNO_3 \rightarrow$ 

$$\begin{array}{c} \Delta \\ \mathsf{C.}\,\mathit{PbS} + O_2 \overset{\Delta}{\rightarrow} \\ \mathsf{D.}\,\mathit{FeS}_2 + O_2 \overset{\Delta}{\rightarrow} \end{array}$$

### **Answer: B**



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**131.** Which metal gives  $NH_4NO_3$ , when react with dilute  $HNO_3$  acid?

A. Zn

 $B.\,Pb$ 

C. Cu

_	4
υ.	Au

**Answer: A** 



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**132.** Select the salt whose aqueous solution is not green:

A.  $FeSO_4$ 

B.  $CrCl_3$ 

 $C. NiCl_2$ 

D. MnCl<sub>2</sub>

**Answer: D** 



**133.** Select the ion exchange reaction, which proceeds to forward direction in aqueous medium:

Aqueous

A. 
$$2AgCl + CaF_2 \rightarrow 2AgF + CaCl_2$$

Aqueous

B.  $BaSO_4 + 2NaOH \rightarrow Ba(OH)_2 + Na_2SO_4$ 

C.  $Pb(NO_3)_2 + 2CH_3COONa \rightarrow Pb(OAc)_2 + 2NaNO_3$ 

Aqueous

D.  $Na_2CrO_4 + BaCl_2 \rightarrow BaCrO_4 + 2NaCl$ 

### **Answer: D**



**134.** Which of the following metal hydroxide is not soluble in exces of  $NH_3$  solution?

A. 
$$Fe(OH)_2$$

$$C. Cd(OH)_2$$

D.  $Cu(OH)_2$ 

**Answer: A** 



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**135.** Which of the following combination of reagents does not undergo redox reaction in aqueous medium?

$$\mathsf{A.} \, \mathit{SnCl}_2 + \mathit{HgCl}_2$$

$$B. CuSO_4 + KCN$$

$$C.Pb(CH_3COO)_2 + KI$$

$$\mathsf{D.} Ag_2O + SO_2$$

### **Answer: C**



**136.**  $K_4 \left[ Fe(CN)_6 \right] + M^{x+}(aq.) \rightarrow M_4 \left[ Fe(CN)_6 \right]_{y} \downarrow$  Coloured precipitate

Which of the following cation does not respond to the above reaction?

- A.  $Cu^{2+}(aq.)$
- B.  $Fe^{3+}(aq.)$
- C.  $Zn^{2+}(aq.)$
- D. None of these

### **Answer: C**



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**137.** Sodium salt solution  $+AgNO_3$ soln.  $\rightarrow$  Coloured precipitate.

solution then which of the following anion is present in the salt solution?

If coloured precipitate is soluble in both dil. HNO3 and excess conc. NH3

- A.  $S^{2-}(aq.)$
- $B.I^{-}(aq.)$

$C.PO_4^{3-}(aq.)$
D. Br <sup>-</sup> (aq. )

### Answer: C



138. Chlorine gas is not produced by heating:

- A. SOCl<sub>2</sub>
- B.  $PbCl_{4}$
- $C. FeCl_3$
- D.  $Hg_2Cl_2$

# **Answer: D**



**139.** Which of the following anion does not produce prepitate with  $BaCl_2$ solution however gives precipitate with AgNO<sub>3</sub>?

A. 
$$CO_3^{2-}(aq.)$$

$$C. MnO_{\Lambda}^{-}(aq.)$$

D.  $S^{2-}(aq.)$ 

B.  $C_2O_4^{2-}(aq.)$ 

**Answer: D** 



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**140.** Which of the following compound is completely water soluble?

A.  $BaSO_A$ 

B.  $Ba(OH)_2$ 

 $C.Al(OH)_3$ 

D. CaF<sub>2</sub>

### **Answer: B**



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141. Which chemical reaction contains incorrect products?

A. 
$$SnSO_4 \rightarrow SnO_2 + SO_3 \uparrow + SO_2 \uparrow$$

$$B.Ag_2C_2O_4 \xrightarrow{\Delta} Ag + CO_2 \uparrow$$

$$C. P_4 O_{10}(s) + CaO(s) \xrightarrow{\Delta} Ca_3 \left(PO_4\right)_2$$

$$D. PbCl_4 \rightarrow PbCl_2 + Cl_2 \uparrow$$

### Answer: A



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**142.** Which of the following compound undergoes disproportionation in presence of  $SO_3$  gas?

$$A. K_2 MnO_4$$

$$\mathsf{B.}\, K_2 Cr O_4$$

$$\mathsf{C}.I_2$$

$$\mathsf{D}.\mathit{Mg}\Big(\mathit{NO}_3\Big)_2$$

### **Answer: A**



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# **143.** Consider the following reaction:

$$K_4 \left[ Fe(CN)_6 \right]$$

$$X(aq.)$$
  $\rightarrow$  Chocolate brown ppt.

$$AgNO_3$$

$$X(aq.) \rightarrow \text{White ppt. (insoluble in dil. } HNO_3)$$

Then 'X' will be:

A. 
$$ZnSO_4$$

B. 
$$CuCl_2$$

$$C. FeSO_4$$

D. $FeCl_3$
-------------

### **Answer: B**



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- **144.** Which of the following reagent does not oxidize HCl?
  - A.  $PbO_2$
  - $\operatorname{B.\,conc.} H_2SO_4$
  - $C. MnO_2$
  - $D. K_2 Cr_2 O_7 / H^{-1}$

### Answer: B



145. Select correct match:

### Anions

- (a)  $CO_3^{2-}$ ,  $SO_3^{2-}$
- (b) CO<sub>3</sub><sup>2-</sup>, HCO<sub>3</sub>
- (c)  $SO_3^{2-}$ ,  $SO_4^{2-}$
- (d) Cl -, Br -

- Separated by reagent
  - BaCl<sub>2</sub>
    - CaCl
    - (CH<sub>3</sub>COO)<sub>2</sub>Pb
      - AgNO 3



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146. Which of the following compound does not produce green coloured product on thermal decomposition?

- A.  $K_2Cr_2O_7$
- B.  $KMnO_{\Lambda}$
- $C. \left(NH_4\right)_2 Cr_2 O_7$
- D.  $NH_4NO_3$

Answer: D



**147.** Aqueous solution of  $FeSO_4$  does not produce precipitate with:

A. NaOH

 $\mathbf{B.}\, N\!H_3\, \mathrm{solution}$ 

 $C. Na_2CO_3$ 

D. None of these

### **Answer: D**



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# **148.** Comproportionationn occurs between:

A. 
$$Cl^{-}(aq.) + ClO^{-}(aq.) + OH^{-}(aq.)$$

$$B. PH_3(g) + H_3PO_4 \text{ acid}$$

$$C. Na_2S(aq.) + Na_2SO_3(aq.)$$

D. 
$$MNO_4^{2-}(aq.) + Mn^{2+}(aq.) + ZnSO_4(aq.)$$

### **Answer: D**



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**149.** Colour of  $CrO_4^2$  (aq.) is not changed by

A. dil. HCl

 $B.NH_3$  solution

C. CH<sub>3</sub>COOH

 $D.NO_2$  gas

### **Answer: B**



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**150.** 
$$Mg_3N_2(s) + H_2O \xrightarrow{R.T.} P \downarrow + Q \uparrow$$

Excess 'Q' gas does not form coloured complex with:

$$\mathsf{C.}\,\mathit{Cr}^{3+}(\mathit{aq.}\,)$$

A.  $Ni^{2+}(aq.)$ 

B.  $Zn^{2+}(aq.)$ 

$$D. Cu^{2+}(aq.)$$

# **Answer: B**



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# NaOH solution?

151. Which of the following pair of cations cann be separated by excess

A. 
$$Fe^{3+}(aq.) + Zn^{2+}(aq.)$$

B. 
$$Mn^{2+}(aq.)$$
,  $Cd^{2+}(aq.)$ 

C. 
$$Mg^{2+}(aq.)$$
,  $Mg^{2+}(aq.)$ 

D. 
$$Al^{3+}(aq.), Cr^{3+}(aq.)$$

# Answer: A

152. Consider following reaction:

$$Cl_2(g) + H_2O \rightarrow P + Q$$

If molecular weight of P is less than Q then incorrect statement is:

- A. On warming 'P' can form deep red coloured vapours with  ${\it CrO}_3$
- B. Q' exhibits bleaching property
- $C. MnO_2$  can change P into  $Cl_2$  gas on warming
- D. P' reacts with  $H_2S$  gas while 'Q' does not

### **Answer: D**



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**153.** Which of the following reagent can dissolves precipitate of  $HgS \downarrow$ 

A. NH<sub>3</sub> solution

B. conc. HCl

C. conc.  $HNO_3$ 

D. Na<sub>2</sub>S solution

### **Answer: D**



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# **154.** Which of the following reaction is incorrect?

$$\mathsf{A.}\, PCl_3 + 3H_2O \,\rightarrow\, H_3PO_3 + 3HCl$$

$$\mathsf{B.}\,\mathit{NCl}_3 + 3H_2O \,\rightarrow\, \mathit{NH}_3 + 3HOCl$$

$$\mathsf{C.}\,\mathit{SbCl}_3 + 3H_2\mathsf{O} \,\rightarrow\, H_2\mathit{SbO}_3 + 3HCl$$

$$D. BiCl_3 + H_2O \rightarrow BiOCl + 2HCl$$

### **Answer: C**



155. Concentrated sodium hydroxiide can separate a mixture of:

- A.  $Al^{3+}$  and  $Cr^{3+}$
- B.  $Cr^{3+}$  and  $Fe^{3+}$
- $C.Al^{3+}$  and  $Zn^{2+}$
- D.  $Zn^{2+}$  and  $Pb^{2+}$

### **Answer: B**



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**156.** Select correct set of species which can't react with water but react with NaOH,

- (i) *NO*<sub>2</sub>
- (ii) *P*<sub>4</sub>
- (iii) Al
- (iv)  $I_2$

A. Only (iv)

B. (iii) and (iv)

C. (ii), (iii) and (iv)

D. all (i), (ii), (iii) and (iv)

### **Answer: C**



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# **157.** Fe(Finely powdered)++HCl(dil.) $\rightarrow P + Q \uparrow$

Compound 'P' does not precipitate with:

 $A. AgnO_3$ 

 $B. K_3 [Fe(CN)_6]$ 

 $C. \left( NH_4 \right)_2 S$ 

 $\mathsf{D.}\,NH_4Cl + NH_4OH$ 

# Answer: D

158. Which combination gives maximum number of products?

$$A. P_4 + SOCl_2$$

$$B. P_4 + SO_2Cl_2$$

$$C. XeF_4 + H_2O$$

D. 
$$NH_4NO_3 + Zn +$$
 Excess Excess NaOH

### **Answer: C**



**159.**  $Cu^{2+}(aq.)$  does not undergo redox reaction with solution:

A. 
$$\left(NH_4\right)_2 S$$

$$B. Na_2S_2O_3$$

### **Answer: A**



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- 160. Hydrolysis of which of the following compound liberates acidic gas?
  - A. Li<sub>2</sub>NH
  - $B.Al_2S_3$
  - $C. CaC_2$
  - D. CaNCN

### **Answer: B**



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**161.** The non-metal which does not react with water but reacts with alkali?

A. Boron

B. Bromine

 $C.P_A$ 

D. Fluorine

### **Answer: C**



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- **162.** A very dilute acidic solution of  $Cd^{2+} \& Ni^{2+}$  gives only yelllwo ppt. of CdS on passing  $H_2S$ , this is due to:
  - A. solubility product  $\left(K_{sp}\right)$  of CdS is more than that of NiS.
  - B. Solubility product  $(K_{sp})$  of CdS is less than that of NiS.
  - C.  $Cd^{2+}$  belong to II B group while  $Ni^{2+}$  belongs to IVth group
  - D. CdS is insoluble in yellow ammonium sulphide (YAS).

### Answer: B

**163.** Thermal decomposition of which of the salt listed below yield a basic and acidic oxides simultaneously?

- A.  $NH_4ClO_4$
- $\mathsf{B.}\,\mathit{CaCO}_3$
- $C. NanO_3$
- D.  $NH_4NO_2$

### Answer: B



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**164.** What are formed products, when aqueous solution of  $CuCl_2$  and  $\left(NH_4\right)_2$ S are mixed?

A. CuS(aq.) and  $NH_4Cl(s)$ 

165. Which of the following compound does not react with cold and dil.  $HNO_3$ ? A. PbO  $B.PbO_2$  $C. FeSO_4$ D. PbCl<sub>2</sub>

B. CuS(s) and  $NH_4Cl(aq.)$ 

C. CuS(aq.) and  $NH_ACl(g)$ 

D. CuS(s) and  $NH_4Cl(s)$ 

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**Answer: B** 

**Answer: B** 

**166.** The incorrect order of solubility in water is:

$$A. Ca(OH)_2 < Sr(OH)_2 < Ba(OH)_2$$

$$\mathsf{B.}\, Li_2CO_3 \leq \mathit{Na}_2CO_3 \leq \mathit{K}_2CO_3$$

$$C. CsNO_3 < RbNO_3 < KNO_3$$

$$\mathsf{D}.\,\mathit{BeS}_2\mathsf{O}_3 < \mathit{MgS}_2\mathsf{O}_3 < \mathit{CaS}_2\mathsf{O}_3$$

### **Answer: D**



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**167.** The correct order of increasing solubility in water is:

A. KF < NaF < LiF

 $B. NaHCO_3 < KHCO_3 < RbHCO_3$ 

 $\mathsf{C.}\,K_2\mathsf{CO}_3 < \mathit{Na}_2\mathsf{CO}_3 < \mathit{Li}_2\mathsf{CO}_3$ 

 $D. LiNO_3 < NaNO_3 < KNO_3$ 

### **Answer: B**



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**168.** Bromine is commercially prepared from sea water by displacement reaction

$$Cl_2 + 2Br^-(aq.) \rightarrow 2Cl^-(aq.) + Br_2$$

 $Br_2$  iis obtained by treatment of the solution with :

 $\mathit{Br}_2$  gas thus formed is dissolved into solution of  $\mathit{Na}_2\mathit{CO}_3$  and then pure

A. *Ca*(*OH*)<sub>2</sub>

B. NaOH

 $C.H_2SO_4$ 

D. HI

### **Answer: C**



169. Which of the following metal on burning in moist air does not give
smell of ammonia?
A. Mg
B. Ca
C. K
D. Li
Answer: C
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<b>170.</b> Gas that can not be collected over water is:
<b>170.</b> Gas that can not be collected over water is: $ A.  N_2 $
A. $N_2$

### **Answer: C**



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# 171. Compound having lowest thermal stability is:

- A. NaHCO<sub>3</sub>
- B. *KHCO*<sub>3</sub>
- C. RbHCO<sub>3</sub>
- D. CsHCO<sub>3</sub>

### **Answer: A**



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**172.** Which of the following statement is incorrect regarding  $Fe^{2+}$  and  $Fe^{3+}$  cations?

A.  $Fe^{3+}$  gives brown colour solution with potassium ferricyanide

B.  $Fe^{2+}$  gives blue precipitate with potassium ferricyanide

 $C. Fe^{3+}$  gives red colour solution with potassium thiocyanate

D.  $Fe^{2+}$  gives brown colour with ammonium thiocyanate

### Answer: D



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173.  $(NH_4)_2 Cr_2 O_7$  on heating liberates a gas. The same gas will be obtained by

A. Heating  $NH_4NO_2$ 

B. Heating NH<sub>4</sub>NO<sub>3</sub>

C. Heating  $(NH_4)_2SO_4$ 

D. Treatment  $Mg_3N_2$  with  $H_2O$ 

Answer: A

174. Which of the following compound liberates acidic gas during its

A.  $Ca_3P_2$ 

B. AlN

hydrolysis?

 $C.Al_2S_3$ 

D.  $CaH_2$ 

### **Answer: C**



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**175.** Which of the following combination does not evolve  ${\it Cl}_2$  gas?

A.  $HCl(aq.) + KMnO_4$ 

B.  $HCl + MnO_2$ 

$$C.HCl + Br_2$$

D. 
$$HCl + F_2$$

### **Answer: C**



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# 176. $NH_3$ gas does not liberate by which of the following combination?

A. Heating of  $NH_4ClO_4$ 

B. Heating of NH<sub>4</sub>Cl

 $C. (NH_4)_2 CO_3 + NaOH$ 

D.  $Li_3N + H_2O$ 

### Answer: A



177. If salt Q undergoes redox reaction with  $H_2S$  in acidic medium then which of the following species can not be possible product?

- A.  $MnO_4^{2-}(aq.)$
- $\mathsf{B.}\,\mathcal{S}$
- $C. MnO_2$
- D. both (a) and (c)

### **Answer: D**



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Heat 
$$Cr_2O_7^{2-}/H^+$$

**178.** Metal sulphate  $(A) \rightarrow \text{oxide}(B) + gas(C) + gas(D) \rightarrow \text{Gree}$ 

 $Na_2O_2$ 

solution  $\rightarrow$  *ExcessE*yellow solution

Compound A, B, C, D are E are respectively:

$$\mathsf{A.FeSO}_4, \mathit{Fe}_2\mathit{O}_3, \mathit{SO}_3, \mathit{SO}_2, \mathit{Na}_2\mathit{CrO}_4$$

 $B.Al_2(So_4)_3, Al_2O_3, SO_3, SO_2, Na_2CrO_4$ C. CuSO<sub>4</sub>, CuO, SO<sub>3</sub>, SO<sub>2</sub>, NaCrO<sub>4</sub>

D.  $ZnSO_A$ ,  $ZnO_2$ ,  $SO_3$ ,  $SO_2$ ,  $Na_2CrO_A$ 

## Answer: A



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# 179. Which of the following radical does not liberate gas with (Zn+dil. HCl)

on warming?

A.  $S^{2}$ 

B.  $SO_3^{2-}$  $C.NO_3^2$ 

D. CH<sub>3</sub>COO -

**Answer: C** 



**180.** Which of the following cation does not give precipitate with  $H_2S$  in neutral medium?

- A.  $Fe^{3+}$
- B. *Cu*<sup>2+</sup>
- C.  $Bi^{3+}$
- D. *Ag* +

#### **Answer: A**

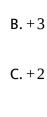


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**181.**  $NaCl(solid) + K_2Cr_2O_7(solid) + conc. H_2SO_4 \rightarrow \text{Reddish brown fumes}$  of 'X'.

The oxidation state of central atom in compound 'X' is:

A. + 6



D. zero

#### Answer: A



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# 182. Diamagnetic gas neutral towards water is:

A.  $N_2O$ 

 $B.NO_2$ 

C. NO

D.  $N_2O_3$ 

#### **Answer: A**



**183.** Which of the following reagent can be used to separate AgCl and

**184.** Which gas is evolved when  $PbO_2$  is treated with conc  $HNO_3$ ?

AgI?

A. dil.  $HNO_3$ 

B.  $NH_4OH$  solution

C. KCN solution

D.  $Na_2S_2O_3$  solution

#### **Answer: B**



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**A.** *NO*<sub>2</sub>

 $\mathsf{B.}\,O_2$ 

 $\mathsf{C}.\,N_2$ 

D.  $N_2O$ 

#### **Answer: B**



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**185.** In a closed container there is a mixture of  $SO_2$ ,  $CO_2$  and  $O_2$  gas, which sequence of reagent can be helpful to separate them ?

- (I) Limewater
- (II) Acidified potassium dichromate
- (III) Alkaline pyragallol.
  - A. (I),(II) and (III)
  - B. (II), (I), (III)
  - C. (III),(II), (I)
  - D. (III), (I), (II)

#### **Answer: B**



186. Which salt is colourless? A.  $KMnO_{\Lambda}$ B.  $BaSO_A$ C.  $NaCrO_4$ D. CoCl<sub>2</sub> **Answer: B Watch Video Solution** 187. Which of the following Xenon compound does not produce explosive XeO<sub>3</sub> on its complete hydrolysis? A.  $XeO_2F_2$ B.  $XeF_2$  $C. XeF_4$ D.  $XeF_6$ 

#### **Answer: B**



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**188.**  $FeSO_4.7H_2O$  (Green vitriol) salt on thermal decomposition does not produce:

- $A.SO_2$
- $B.O_2$
- $\mathsf{C}.SO_3$
- $D.H_2O$  vapour

#### **Answer: B**



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 $BaCl_2$  **189.**  $X(aq) + Na_2O_2 \rightarrow Y(aq.) \rightarrow Z \downarrow \text{ Insoluble in dil. HCl}$ 

X and Y are different sodium salts, then anion present in the salt (X) is:

B. FeCl<sub>2</sub>  $C. S_2Cl_2$ 

D.  $BCl_3$ **Answer: D** 

A.  $Hg_2Cl_2$ 

**190.** Which of the following chloride does not react with  $PCl_5$  on heating?

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A.  $Cr_2O_7^{2-}$ 

B.  $C_2O_4^2$ 

 $c. SO_3^{2-}$ 

D.  $SO_4^{2-}$ 

**Answer: C** 

Air KOH  $P(\text{soln.})(\text{Coloured}) \rightarrow Q(\text{soln.})(\text{Coloured}) \rightarrow R \downarrow (ppt.)$  (Insoluble in both excess NaOH a

then P contains:

A. 
$$Cu^{2+}(aq.)$$

B.  $Fe^{2+}(aq.)$ 

C. 
$$Cu^{2+}(aq.)$$

D. 
$$Ni^{2+}(aq.)$$

#### **Answer: B**



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Then (X) cation can not be:

A.  $Fe^{3+}$  gives brown colour solution with potassium ferricyanide

 $B.AI^{3+}$ 

C.  $Cr^{3+}$ 

D. *Mg*<sup>2+</sup>

#### **Answer: A**



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**193.**  $X(\text{satl}) + AgNO_3(aq.) \rightarrow Y \downarrow (\text{yellow ppt.})$  (soluble in excess of  $NH_3$ solution)

Salt X, does not contain:

B. Br⁻

A.  $PO_4^{3}$ 

 $\mathsf{C}.\,I^{\mathsf{-}}$ 

D.  $AsO_3^3$ 

#### **Answer: C**



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#### Excess

**194.**  $M^{n+}(aq.) + KI \rightarrow X \downarrow ppt. \rightarrow KI$  ppt. remains insoluble in excess KI solution. Then cation  $M^{n+}(aq.)$  can be:

A. 
$$Pb^{2+}(aq.)$$

B. 
$$Cu^{2+}(aq.)$$

C. 
$$Bi^{3+}(aq.)$$

D. 
$$Hg^{2+}(aq.)$$

#### **Answer: B**



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**195.** Aqueous solution of which of the following cation gives precipitate with potash alum?

A.  $H_2O_2$ B.  $Sn^{2+}(aq.)$ C. HFD. HBrAnswer: C

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**196.** Colour of acidified  $K_2Cr_2O_7$  is not changed by:

A.  $Cu^{2+}(aq.)$ 

B.  $Zn^{2+}(aq.)$ 

 $C. Ba^{2+}(aq.)$ 

D.  $Ni^{2+}(aq.)$ 

**Answer: C** 

#### LEVEL 3

$$P(\text{aq.}) \xrightarrow{Zn + \text{dil.HCl}} Q \uparrow \xrightarrow{\text{FeCl}_3} R \downarrow + T$$

$$A \mid R \qquad \qquad \downarrow \text{MnO}_{4}^{-} / \text{H}^{+} \qquad \text{ion}$$

$$\downarrow R \qquad \qquad \downarrow \text{MnO}_{4}^{-} / \text{H}^{+} \qquad \text{ion}$$

$$\downarrow R \qquad \qquad \downarrow \text{MnO}_{4}^{-} / \text{H}^{+} \qquad \text{ion}$$

$$\downarrow R \qquad \qquad \downarrow \text{MnO}_{4}^{-} / \text{H}^{+} \qquad \text{ion}$$

$$\downarrow R \qquad \qquad \downarrow \text{MnO}_{4}^{-} / \text{H}^{+} \qquad \text{ion}$$

$$\downarrow R \qquad \qquad \downarrow \text{MnO}_{4}^{-} / \text{H}^{+} \qquad \text{ion}$$

$$\downarrow R \qquad \qquad \downarrow \text{MnO}_{4}^{-} / \text{H}^{+} \qquad \text{ion}$$

$$\downarrow R \qquad \qquad \downarrow \text{MnO}_{4}^{-} / \text{H}^{+} \qquad \text{ion}$$

1.

Q. Species P and S are respectively:

A. 
$$SO_3^{2-}(aq.), S$$

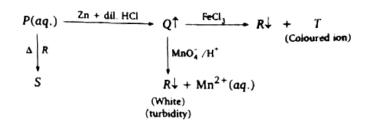
B. 
$$SO_3^{2-}(aq.)$$
,  $S_2O_3^{2-}(aq.)$ 

$$C. S_2O_3^{2-}(aq.), SO_3^{2-}(aq.)$$

D. None of these

#### Answer: B





Q. 'T' cannot be identify by:

A.  $NH_3$  solution

B. NH₄SCN

2.

 $C. (NH_4)_2 S$ 

D. Excess KCN

#### Answer: B



#### **View Text Solution**

**3.** Consider three P, Q, R, salts among them P and Q salts have different cations annd also have different coloured polyatomic anion due to charge transfer phenomenon while P and R salts have same cation but have different anions. Salts R decomposes into an acidic gas an a basic

gas.

Q. Salt R can not be:

A.  $NH_4NO_3$ 

B.  $\left(NH_4\right)_2CO_3$ C.  $\left(NH_4\right)_2S$ 

D.  $NH_{\Lambda}Cl$ 

#### Answer: A



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4. Consider three P, Q, R, salts among them P and Q salts have different cations annd also have different coloured polyatomic anion due to charge transfer phenomenon while P and R salts have same cation but have different anions. Salts R decomposes into an acidic gas an a basic gas.

Q. Salt P decomposes on heating into a coloured solid, neutral gas a

neutral vapour, then which of the following can not be the product of salt P after decomposition?

A.  $N_2$ 

B.  $Cr_2O_3$ 

 $\mathsf{C}.\,I_2$ 

 $D.H_2O$ 

#### **Answer: C**



**5.** Consider three P, Q, R, salts among them P and Q salts have different cations annd also have different coloured polyatomic anion due to charge transfer phenomenon while P and R salts have same cation but have different anions. Salts R decomposes into an acidic gas an a basic gas.

Q. If salt Q underrgoes redox reaction with  $H_2S$  in acidic medium then which of the following speies can not be possible product?

A.  $MnO_4^{2}$  (aq.)

B. *S* 

 $C. MnO_2$ 

D. Both (a) and (c)

#### **Answer: D**



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- **6.** Three compound X, Y and Z were taken into three different laboratory vessels annd they are carried out by a chemist in his car. The car caught fire due to short circuit and the chemist came out of the car and noticed following observations:
- Q. Compound X changes into white substnace along with liberation of neutral oxide and then white substnace decomposed into three products among which two are acidic oxides. among these oxides non-polar oxide can undergo polar cyclic polymer on cooling. the compound X will be:

 $A. MgSO_4 \cdot 7H_2O$ 

B. 
$$ZnSO_4 \cdot 7H_2O$$

C. 
$$CaSO_4 \cdot 2H_2O$$

D. 
$$FeSO_4 \cdot 7H_2O$$

#### Answer: D



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**7.** Three compound X, Y and Z were taken into three different laboratory vessels annd they are carried out by a chemist in his car. The car caught fire due to short circuit and the chemist came out of the car and noticed following observations:

Q. Compound Y produced two oxides, among these oe oxide turns anhydrous  ${\it CuSO}_4$  into blue and other gas slows down fire in the car, then

A.  $NH_ANO_2$ 

Y is

B.  $NaHCO_3$ 

 $C.MgC_2O_4$ 

D.  $NH_4NO_3$ 

#### **Answer: B**



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**8.** Three compound X, Y and Z were taken into three different laboratory vessels annd they are carried out by a chemist in his car. The car caught fire due to short circuit and the chemist came out of the car and noticed following observations:

Q. Which of the following compound does not react with cold and dil.

 $HNO_3$ ?

A. PbO

 $\mathsf{B.}\mathit{PbO}_2$ 

 $C. FeSO_4$ 

D. PbCl<sub>2</sub>

#### **Answer: B**



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- **9.** In salts of polyatomic anion, as polarising power of cation increase, thermal stability of the salt decrease and decomposed species may further undergo redox reaction
- Q. Which of the followinng species undergoes non-redox thermal decomposition reaction on heating?

A.  $FeSO_4$ 

 $B. SnSO_4$ 

 $C.H_2C_2O_4$ 

D.  $Na_2HPO_A$ 

#### **Answer: D**



**10.** In salts of polyatomic anion, as polarising power of cation increase, thermal stability of the salt decrease and decomposed species may further undergo redox reaction

Q. Water soluble salt(x) was heated into three products A, B and C and B and C are two different paramagnetic gases. A is red in hot condition, then salt(x) is:

A. 
$$Hg(NO_3)_2$$

$$\mathsf{B.}\mathit{FeC}_2O_4$$

$$\mathsf{C.}\,\mathit{ZnSO}_4$$

D. 
$$Pb(NO_3)_2$$

#### **Answer: D**



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11. Dioxygen directly reacts with nearly all metals annot non-metals except some metals (e.g., Au, Pt) and some noble gases and form oxide(s). Oxides

can be simple (e.g., MgO,  $Al_2O_3$ ) or mixed  $\left(Pb_3O_4, Fe_3O_4\right)$ . Simple oxides can be classified on the basic of their acidic, basic or amphoteric character. an oxide that combines with water to give an acid is termed acidic oxide (i.e.,  $SO_2$ ,  $Cl_2O_7$ ,  $CO_2$ ,  $N_2O_5$ ). for example,  $SO_2$  combines with water to give  $H_2SO_3$ , an acid.

Gaseous non-metal (A) 
$$\xrightarrow{O_2} P \uparrow \xrightarrow{O_2} Q \uparrow \xrightarrow{H_2O} R$$
 (oxy acid)  $+ P \uparrow$ 

Q. If,

Solid non-metal (B)  $\xrightarrow{O_2} X \uparrow \xrightarrow{O_2} Y \uparrow \xrightarrow{H_2O} Z$  (oxy acid) + Heat

Then select correct statement with respect to gas 'Q'?

A. Paramagnetic gas

B. Neutral oxide

C. Colourles gas

D. Diatomic gas

#### Answer: A



12. Dioxygen directly reacts with nearly all metals annoth non-metals except some metals (e.g., Au, Pt) and some noble gases and form oxide(s). Oxides can be simple (e.g., MgO,  $Al_2O_3$ ) or mixed  $\left(Pb_3O_4, Fe_3O_4\right)$ . Simple oxides can be classified on the basic of their acidic, basic or amphoteric character. an oxide that combines with water to give an acid is termed acidic oxide (i.e.,  $SO_2$ ,  $Cl_2O_7$ ,  $CO_2$ ,  $N_2O_5$ ). for example,  $SO_2$  combines with water to give  $H_2SO_3$ , an acid.

Gaseous non-metal (A) 
$$\xrightarrow[\text{approp. temp}]{0_2} P \uparrow \xrightarrow[\text{room temp}]{0_2} Q \uparrow \xrightarrow[\text{H}_2O]{0} R \text{ (oxy acid)} + P \uparrow$$

Q. If Solid non-metal (B) 
$$\frac{o_2}{\text{approp. semp.}} X \uparrow \frac{o_2}{\text{approp. catalyst & semp.}} Y \uparrow \xrightarrow{\text{H.go.}} Z$$
 (oxy acid) + Heat

Then 'X' is

A. NO

B.  $CO_2$ 

 $\mathsf{C}.SO_2$ 

 $D.SO_3$ 

#### **Answer: C**



13. Dioxygen directly reacts with nearly all metals annot non-metals except some metals (e.g., Au, Pt) and some noble gases and form oxide(s). Oxides can be simple (e.g., MgO,  $Al_2O_3$ ) or mixed  $\left(Pb_3O_4, Fe_3O_4\right)$ . Simple oxides can be classified on the basic of their acidic, basic or amphoteric character. an oxide that combines with water to give an acid is termed acidic oxide (i.e.,  $SO_2$ ,  $Cl_2O_7$ ,  $CO_2$ ,  $N_2O_5$ ). for example,  $SO_2$  combines with water to give  $H_2SO_3$ , an acid.

Gaseous non-metal (A) 
$$\xrightarrow{O_2} P \uparrow \xrightarrow{O_2} Q \uparrow \xrightarrow{H \neq O} R$$
 (oxy acid) +  $P \uparrow$ 

Q. If,

Solid non-metal (B)  $\xrightarrow{O_2} X \uparrow \xrightarrow{O_2} X \uparrow \xrightarrow{O_2} Y \uparrow \xrightarrow{H \neq O} Z$  (oxy acid) + Heat

Then select incorrect statement with respect to gas 'X'

A. burning sulphur smell

B. Reacts with Cl<sub>2</sub>

C. Residue of sulphur with  $H_2S$ 

D. Does not react with Ca(OCl)Cl

#### Answer: D



14. Consider the following reactions and answer the following questions.

M(Double salt)+ $NH_{A}Cl(s) + NH_{A}OH \rightarrow No ppt.$ 

M(double salt)+NaOH solution  $\rightarrow N \uparrow + P \downarrow$  (coloured ppt.)

Q. Which of the following pair of cations are present in salt M?

A. 
$$PH_A^+$$
,  $Mg^{2+}$ 

B. 
$$NH_{\Lambda}^{+}$$
,  $Fe^{3+}$ 

$$C.PH_{4}^{+},Zn^{2+}$$

D. 
$$NH_4^+$$
 ,  $Fe^{2+}$ 

#### Answer: D



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15. Consider the following reactions and answer the following questions.

M(Double salt)+ $NH_{\Lambda}Cl(s) + NH_{\Lambda}OH \rightarrow No ppt.$ 

M(double salt)+NaOH solution  $\rightarrow N \uparrow + P \downarrow$  (coloured ppt.)

 $Q.P \downarrow + conc. HCl \rightarrow Q(coloured solution)$ 

Incorrect statement about Q is:

A. It can exist in dimeric form

B. Its aqueous solution is acidic

C. It is used in methylene blue test for  $H_2S$ 

D. On passing  ${\it Cl}_2$  gas colour of aqueous solution of Q changes

#### **Answer: C**



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**16.** Consider the following reactions and answer the following questions.

M(Double salt)+ $NH_4Cl(s) + NH_4OH \rightarrow No ppt.$ 

M(double salt)+NaOH solution  $\rightarrow N \uparrow + P \downarrow$  (coloured ppt.)

Q. Reaction does not occur with salt M and gas N:

A.  $NaNO_2 + dil. H_2SO_4 + M(salt solution) \rightarrow$ 

B.  $HgI_2 + N \uparrow \rightarrow$ 

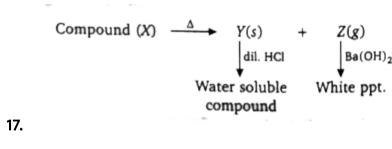
C. M(salt solution) 
$$+H_2S \rightarrow$$

D. M (salt solution)+ $Br_2 \rightarrow$ 

#### Answer: C



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- Q. Compound 'X' is:

A. NaNO<sub>3</sub>

- $B. Ag_2C_2O_4$
- $C. PbSO_4$
- D. ZnCO<sub>3</sub>

### Answer: D

Compound (X) 
$$\xrightarrow{\Delta}$$
  $Y(s)$  +  $Z(g)$   $\downarrow$  dil. HCl  $\downarrow$  Ba(OH)<sub>2</sub>

Water soluble compound White ppt.

18.

Q. Incorrect statement 'Y' changes on heating:

A. Colour of 'Y' changes on heating

B. Z' is anhydride of  $H_2CO_3$ 

C. Y' can react with NaOH

D. Z' does not act as Lewis acid

#### **Answer: D**



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**19.** The unique behaviour of CU, having a positive  $E^{\circ}$  (reduction potential) accounts for its inability to liberate  $H_2$  from acids,. Only oxidising acids (nitric acid and hot concentrated sulphuric acid) react with Cu. The high energy of transform Cu(s) to  $Cu^{2+}(aq.)$  is not balanced by its hydration enthalpy.

On the other hand, All Cu(II) halides are known except iodide. in this case,

$$2Cu^{2+} + 4I^{-} \rightarrow 2CuI(s) + I_{2}$$

 $Cu^{2+}$  oxidises  $I^{-}$  to  $I_{2}$ :

However, copper (I) compounds are unstable in aqueous solution annot undergo disproportionation.

$$2Cu^+(aq.) \rightarrow Cu^{2+}(aq.) + Cu$$

The stability of  $Cu^{2+}(aq.)$  rather than  $Cu^{+}(aq)$  is due to the much more negative  $\Delta_{Hyd}$  of  $Cu^{2+}(aq.)$  than  $Cu^{+}(aq.)$ 

Q. Consider the following transformation:

$$CuSO_A(aq.) + KI(excess) \rightarrow product$$

Select the correct statement:

A. Product contains  $\left[ Cu(H_2O_4) \right]^{2+}$  ion.

B. Presence of brown colouration in product is due to  $I_3^{\text{-}}$  ion

C. Oxidation state of sulphur in reactant and product is different

D. white ppt. of  $CuI_2$  is observed in product

#### Answer: B



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20. The unique behaviour of CU, having a positive  $E^{\circ}$  (reduction potential) accounts for its inability to liberate  $H_2$  from acids,. Only oxidising acids (nitric acid and hot concentrated sulphuric acid) react with Cu. The high energy of transform Cu(s) to  $Cu^{2+}(aq.)$  is not balanced by its hydration enthalpy.

On the other hand, All Cu(II) halides are known except iodide. in this case,

 $Cu^{2+}$  oxidises  $I^-$  to  $I_2$ :

 $2Cu^{2+} + 4I^{-} \rightarrow 2CuI(s) + I_{2}$ 

However, copper (I) compounds are unstable in aqueous solution anno undergo disproportionation.

 $2Cu^+(aq.) \rightarrow Cu^{2+}(aq.) + Cu$ 

The stability of  $Cu^{2+}(aq.)$  rather than  $Cu^{+}(aq)$  is due to the much more

negative  $\Delta_{Hvd}$  of  $Cu^{2+}(aq.)$  than  $Cu^{+}(aq.)$ 

Q. Select the correct chemical change:

A. 
$$Cu + Dil$$
.  $H_2SO_4 \rightarrow CuSO_4 + H_2(g)$ 

B. 
$$Cu + dil. HNO_3 \rightarrow Cu(NO_3)_2 + N_2O(g)$$

$$C. CuSO_4(aq.) + KCN(excess) \rightarrow K_2[Cu(CN)_4]$$

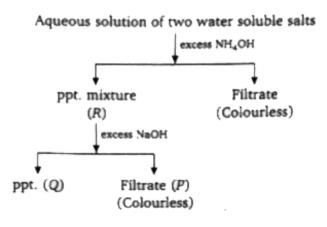
D. 
$$CuSO_4(aq.) + NH_4OH \rightarrow Cu(OH)_2$$

#### **Answer: D**



21.

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Q. When  $H_2S$  gas was passed into filtrate (P), a coloured precipitate was

obtained, then cation present in the filtrate is:

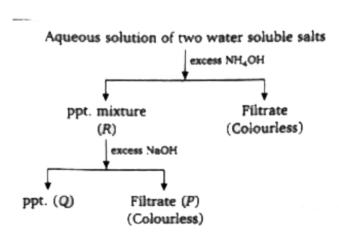
- A.  $Zn^{2+}(aq.)$
- B.  $Cr^{3+}(aq.)$
- $C.Al^{3+}(aq.)$
- D.  $Pb^{2+}(aq.)$

#### Answer: D



22.

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Q. Precipitate (Q) was treated withdil. HCl and coloured solution was obtained. On passing  $H_2S$  gas into this solution no precipitate was

obtained but colour of the solution changes, then cation present in the precipitate (Q) can be identified by:

A.  $Na_2S_2O_3$  solution

B. KI + Starch

 $\mathsf{C.}\,K_4\Big[\mathit{Fe}(\mathit{CN})_6\Big]$ 

D. All

#### **Answer: D**



23.

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$$P(\text{aq.}) \xrightarrow{\text{Zn + dil.HCl}} Q \uparrow \xrightarrow{\text{FeCl}_3} R \downarrow + T$$

$$\downarrow MnO_{4}^{-}/H^{+} \qquad \text{(coloured ion)}$$

$$R \downarrow + Mn^{2+}(\text{aq.})$$

$$\text{(white turbidity)}$$

Q. Species P and S are respectively:

A.  $SO_3^{2-}$  (aq. ), S

B. 
$$SO_3^{2-}(aq.), S_2O_3^{2-}(aq.)$$

$$C. S_2O_3^{2-}(aq.), SO_3^{2-}(aq.)$$

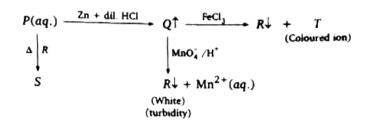
D. None of these

#### **Answer: B**



24.

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Q. 'T' cannot be identify by:

A.  $NH_3$  solution

 $B.NH_4SCN$ 

 $C. (NH_4)_2 S$ 

D. Excess KCN

#### **Answer: B**



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**25.** Consider three P, Q, R, salts among them P and Q salts have different cations annd also have different coloured polyatomic anion due to charge transfer phenomenon while P and R salts have same cation but have different anions. Salts R decomposes into an acidic gas an a basic gas.

Q. Salt R can not be:

- A.  $NH_4NO_3$
- B.  $(NH_4)_2CO_3$
- $C. \left(NH_4\right)_2 S$
- D.  $NH_4Cl$

#### **Answer: A**



**26.** Consider three P, Q, R, salts among them P and Q salts have different cations annd also have different coloured polyatomic anion due to charge transfer phenomenon while P and R salts have same cation but have different anions. Salts R decomposes into an acidic gas an a basic gas.

Q. Salt P decomposes on heating into a coloured solid, neutral gas a neutral vapour, then which of the following can not be the product of salt P after decomposition?

A.  $N_2$ 

B.  $Cr_2O_3$ 

 $C.I_2$ 

 $D.H_2O$ 

**Answer: C** 



**27.** Consider three P, Q, R, salts among them P and Q salts have different cations annd also have different coloured polyatomic anion due to charge transfer phenomenon while P and R salts have same cation but have different anions. Salts R decomposes into an acidic gas an a basic gas.

Q. If salt Q underrgoes redox reaction with  $H_2S$  in acidic medium then which of the following speies can not be possible product?

A.  $MnO_4^{2-}(aq.)$ 

**B**. *S* 

 $C. MnO_2$ 

D. Both (a) and (c)

#### **Answer: D**



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vessels annd they are carried out by a chemist in his car. The car caught

28. Three compound X, Y and Z were taken into three different laboratory

fire due to short circuit and the chemist came out of the car and noticed following observations:

Q. Compound X changes into white substnace along with liberation of neutral oxide and then white substnace decomposed into three products among which two are acidic oxides. among these oxides non-polar oxide can undergo polar cyclic polymer on cooling. the compound X will be:

 $A. MgSO_4 \cdot 7H_2O$ 

B.  $ZnSO_4 \cdot 7H_2O$ 

 $C. CaSO_4 \cdot 2H_2O$ 

D.  $FeSO_4 \cdot 7H_2O$ 

### Answer: D



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**29.** Three compound X, Y and Z were taken into three different laboratory vessels annd they are carried out by a chemist in his car. The car caught fire due to short circuit and the chemist came out of the car and noticed

following observations:

Q. Compound Y produced two oxides, among these oe oxide turns anhydrous  ${\it CuSO}_4$  into blue and other gas slows down fire in the car, then Y is

- A.  $NH_4NO_2$
- B.  $NaHCO_3$
- $C.MgC_2O_4$
- D.  $NH_4NO_3$

#### **Answer: B**



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**30.** Three compound X, Y and Z were taken into three different laboratory vessels annd they are carried out by a chemist in his car. The car caught fire due to short circuit and the chemist came out of the car and noticed following observations:

Q. Which of the following compound does not react with cold and dil.

 $HNO_3$ ?

A. PbO

B. *PbO*<sub>2</sub>

 $\mathsf{C}.\mathit{FeSO}_4$ 

D. PbCl<sub>2</sub>

## Answer: B



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**31.** In salts of polyatomic anion, as polarising power of cation increase, thermal stability of the salt decrease and decomposed species may further undergo redox reaction

Q. Which of the followinng species undergoes non-redox thermal decomposition reaction on heating?

A.  $FeSO_4$ 

$$B. SnSO_4$$

$$\mathsf{C.}\,H_2C_2O_4$$

D. 
$$Na_2HPO_4$$

#### **Answer: D**



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**32.** In salts of polyatomic anion, as polarising power of cation increase, thermal stability of the salt decrease and decomposed species may further undergo redox reaction

Q. Water soluble salt(x) was heated into three products A, B and C and B and C are two different paramagnetic gases. A is red in hot condition, then salt(x) is:

A. 
$$Hg(NO_3)_2$$

$$\mathsf{B.}\mathit{FeC}_2O_4$$

$$C. ZnSO_4$$

D. 
$$Pb(NO_3)_2$$

#### **Answer: D**



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**33.** Dioxygen directly reacts with nearly all metals annot non-metals except some metals (e.g., Au, Pt) and some noble gases and form oxide(s). Oxides can be simple (e.g., MgO,  $Al_2O_3$ ) or mixed  $\left(Pb_3O_4, Fe_3O_4\right)$ . Simple oxides can be classified on the basic of their acidic, basic or amphoteric character. an oxide that combines with water to give an acid is termed acidic oxide (i.e.,  $SO_2$ ,  $Cl_2O_7$ ,  $CO_2$ ,  $N_2O_5$ ). for example,  $SO_2$  combines with water to give  $H_2SO_3$ , an acid.

Gaseous non-metal (A) 
$$\xrightarrow[\text{approp. temp.}]{0_2} P \uparrow \xrightarrow[\text{room temp.}]{0_2} Q \uparrow \xrightarrow[\text{H}_20]{0} R \text{ (oxy acid)} + P \uparrow$$

Q. If, Solid non-metal (B) 
$$\xrightarrow{0_2} X \uparrow \xrightarrow{0_2} Y \uparrow \xrightarrow{H_2O} Z$$
 (oxy acid) + Heat

Then select correct statement with respect to gas 'Q'?

- A. Paramagnetic gas
- B. Neutral oxide

- C. Colourles gas
- D. Diatomic gas

**Answer: A** 



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**34.** Dioxygen directly reacts with nearly all metals annot non-metals except some metals (e.g., Au, Pt) and some noble gases and form oxide(s). Oxides can be simple (e.g., MgO,  $Al_2O_3$ ) or mixed  $\left(Pb_3O_4, Fe_3O_4\right)$ . Simple oxides can be classified on the basic of their acidic, basic or amphoteric character. an oxide that combines with water to give an acid is termed acidic oxide (i.e.,  $SO_2$ ,  $Cl_2O_7$ ,  $CO_2$ ,  $N_2O_5$ ). for example,  $SO_2$  combines with water to give  $H_2SO_3$ , an acid.

Gaseous non-metal (A) 
$$\xrightarrow{O_2} P \uparrow \xrightarrow{O_2} Q \uparrow \xrightarrow{H_2O} R$$
 (oxy acid) +  $P \uparrow$ 

O. If Solid non-metal (B) 
$$\xrightarrow{O_2} X \uparrow \xrightarrow{O_2} Y \uparrow \xrightarrow{H_2O} Z$$
 (oxy acid) + Heat

Then 'X' is

A. NO

- $B.CO_2$
- $C.SO_2$
- $D.SO_3$

#### **Answer: C**



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**35.** Dioxygen directly reacts with nearly all metals annoth non-metals except some metals (e.g., Au, Pt) and some noble gases and form oxide(s). Oxides can be simple (e.g., MgO,  $Al_2O_3$ ) or mixed  $\left(Pb_3O_4, Fe_3O_4\right)$ . Simple oxides can be classified on the basic of their acidic, basic or amphoteric character. an oxide that combines with water to give an acid is termed acidic oxide (i.e.,  $SO_2$ ,  $Cl_2O_7$ ,  $CO_2$ ,  $N_2O_5$ ). for example,  $SO_2$  combines with water to give  $H_2SO_3$ , an acid.

Gaseous non-metal (A) 
$$\xrightarrow{O_2} P \uparrow \xrightarrow{O_2} Q \uparrow \xrightarrow{H_2O} R$$
 (oxy acid) +  $P \uparrow$ 

O. If. Solid non-metal (B)  $\xrightarrow{O_2} X \uparrow \xrightarrow{\text{approp. samp}} X \uparrow \xrightarrow{O_2} Y \uparrow \xrightarrow{H_2O} Z$  (oxy acid) + Heat

I. If, 
$$Z$$
 (dil.) —  $H_2 \uparrow$   $Z$  (conc.) —  $U$   $U$  No reaction

Then select incorrect statement with respect to gas 'X'

- A. burning sulphur smell
- B. Reacts with  $Cl_2$
- C. Residue of sulphur with  $H_2S$
- D. Does not react with Ca(OCl)Cl

## **Answer: D**



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**36.** Consider the following reactions and answer the following questions.

M(Double salt)+ $NH_4Cl(s) + NH_4OH \rightarrow No ppt.$ 

M(double salt)+NaOH solution  $\rightarrow N \uparrow + P \downarrow$  (coloured ppt.)

Q. Which of the following pair of cations are present in salt M?

A. 
$$PH_4^+$$
,  $Mg^{2+}$ 

B.  $NH_{4}^{+}$ ,  $Fe^{3+}$ 

 $\mathsf{C.}\,PH_{4}^{^{+}}$  ,  $Zn^{2\,^{+}}$ 

D.  $NH_{4}^{+}$ ,  $Fe^{2+}$ 

#### **Answer: D**



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37. Consider the following reactions and answer the following questions.

M(Double salt)+ $NH_4Cl(s) + NH_4OH \rightarrow No ppt.$ 

M(double salt)+NaOH solution  $\rightarrow N \uparrow + P \downarrow$  (coloured ppt.)

 $Q.P \downarrow + conc. HCl \rightarrow Q(coloured solution)$ 

Incorrect statement about Q is:

A. It can exist in dimeric form

B. Its aqueous solution is acidic

C. It is used in methylene blue test for  $H_2S$ 

D. On passing  ${\it Cl}_2$  gas colour of aqueous solution of Q changes

#### **Answer: C**



## **Watch Video Solution**

**38.** Consider the following reactions and answer the following questions.

M(Double salt)+
$$NH_4Cl(s) + NH_4OH \rightarrow No ppt.$$

M(double salt)+
$$NaOH$$
 solution  $\rightarrow N \uparrow + P \downarrow$  (coloured ppt.)

Q. Reaction does not occur with salt M and gas N:

A. 
$$NaNO_2 + dil. H_2SO_4 + M(salt solution) \rightarrow$$

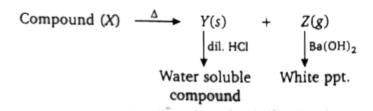
B. 
$$HgI_2 + N \uparrow \rightarrow$$

C. M(salt solution) 
$$+H_2S \rightarrow$$

D. M (salt solution)+
$$Br_2 \rightarrow$$

#### **Answer: C**





39.

Q. Compound 'X' is:

A.  $NaNO_3$ 

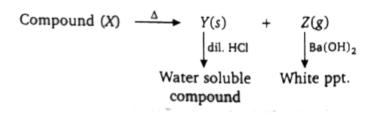
 $\mathsf{B.}\mathit{Ag}_{2}C_{2}O_{4}$ 

 $\mathsf{C}.\mathit{PbSO}_4$ 

D.  $ZnCO_3$ 

## **Answer: D**





- Q. Incorrect statement 'Y' changes on heating:
  - A. Colour of 'Y' changes on heating
  - B. Z' is anhydride of  $H_2CO_3$
  - C. Y' can react with NaOH
  - D. Z' does not act as Lewis acid

#### **Answer: D**

40.



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**41.** The unique behaviour of CU, having a positive  $E^\circ$  (reduction potential) accounts for its inability to liberate  $H_2$  from acids,. Only oxidising acids (nitric acid and hot concentrated sulphuric acid) react

with Cu. The high energy of transform Cu(s) to  $Cu^{2+}(aq.)$  is not balanced

by its hydration enthalpy.

On the other hand, All Cu(II) halides are known except iodide. in this case,

 $Cu^{2+}$  oxidises  $I^-$  to  $I_2$ :

$$2Cu^{2+} + 4I^{-} \rightarrow 2CuI(s) + I_{2}$$

However, copper (I) compounds are unstable in aqueous solution annot undergo disproportionation.

$$2Cu^+(aq.) \rightarrow Cu^{2+}(aq.) + Cu$$

The stability of  $Cu^{2+}(aq.)$  rather than  $Cu^{+}(aq)$  is due to the much more negative  $\Delta_{Hyd}$  of  $Cu^{2+}(aq.)$  than  $Cu^{+}(aq.)$ 

Q. Consider the following transformation:

$$CuSO_A(aq.) + KI(excess) \rightarrow product$$

Select the correct statement:

A. Product contains  $\left[Cu(H_2O_4)\right]^{2+}$  ion.

B. Presence of brown colouration in product is due to  $I_3^{\text{-}}$  ion

C. Oxidation state of sulphur in reactant and product is different

D. white ppt. of  $CuI_2$  is observed in product



## Watch Video Solution

**42.** The unique behaviour of CU, having a positive  $E^{\circ}$  (reduction potential) accounts for its inability to liberate  $H_2$  from acids,. Only oxidising acids (nitric acid and hot concentrated sulphuric acid) react with Cu. The high energy of transform Cu(s) to  $Cu^{2+}(aq.)$  is not balanced by its hydration enthalpy.

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The stability of  $Cu^{2+}(aq.)$  rather than  $Cu^{+}(aq)$  is due to the much more negative  $\Delta_{Hyd}$  of  $Cu^{2+}(aq.)$  than  $Cu^{+}(aq.)$ 

Q. Select the correct chemical change:

A. 
$$Cu + Dil$$
.  $H_2SO_4 \rightarrow CuSO_4 + H_2(g)$ 

B. 
$$Cu + dil. HNO_3 \rightarrow Cu(NO_3)_2 + N_2O(g)$$

$$C. CuSO_4(aq.) + KCN(excess) \rightarrow K_2[Cu(CN)_4]$$

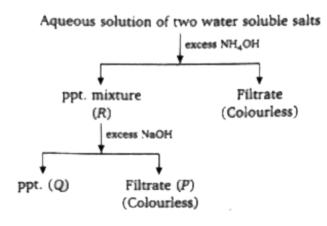
D. 
$$CuSO_4(aq.) + NH_4OH \rightarrow Cu(OH)_2$$

#### **Answer: D**



43.

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Q. When  $H_2S$  gas was passed into filtrate (P), a coloured precipitate was obtained, then cation present in the filtrate is:

A. 
$$Zn^{2+}(aq.)$$

B.  $Cr^{3+}(aq.)$ 

 $C.Al^{3+}(aq.)$ 

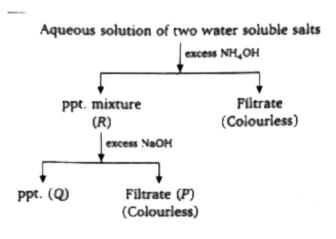
D.  $Pb^{2+}(aq.)$ 

#### **Answer: D**



44.

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Q. Precipitate (Q) was treated withdil. HCl and coloured solution was obtained. On passing  $H_2S$  gas into this solution no precipitate was obtained but colour of the solution changes, then cation present in the precipitate (Q) can be identified by:

- A.  $Na_2S_2O_3$  solution
- B. KI + Starch
- $C. K_4 \Big[ Fe(CN)_6 \Big]$
- D. All

#### **Answer: D**



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## ONE OR MORE ANSWERS IS/ARE CORRECT

- **1.** Which of the following combination of species can evolve  $O_2$ ?
- A.  $PbO_2$  + warm conc.  $H_2SO_4$ 

  - $C. PbO_2 + conc. HNO_3$
  - $D. XeF_2 + H_2O$

B.  $NaOH + F_2$ 

## Answer: A::B::C::D



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**2.** 
$$SO_2(g) + Cl_2(g) \rightarrow X \rightarrow Y + Z$$

then X, Y and Z can be:

A. SOCl<sub>2</sub>

 $\mathsf{B.}\, SO_2Cl_2$ 

 $C.SO_2$ 

 $D.PCl_5$ 

## Answer: B::C::D



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**3.** Which of the following nitrate salt solution neither produce ppt. with excess NaOH nor with excess  $NH_4OH$  solution?

A.  $Al(NO_3)_3$ 

B.  $Zn(NO_3)_2$ 

C.  $Cr(NO_3)_3$ 

D.  $Pb(NO_3)_2$ 

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**Answer: B::C** 

4. Which of the following compound(s) give two acids on dissolution in

 $H_2O$ ?

 $A.P_4O_8$ 

B. PCl<sub>3</sub>

 $C.NO_2$ D.  $C_3O_2$ 

Answer: A::B::C

$$1:20 \quad H_2O \quad H_2O \quad H_2O$$
**5.**  $Xe + F_2 \rightarrow X \rightarrow Y \rightarrow Z \rightarrow XeO_3$ 

Select correct option(s) for X, Y, Z and given chemical change:

- A. X, Y and Z are in same oxidation state
- B. All have equal number of lone pair on central atom
- C. All are non-planar
- D. All have equal number of covalent bonds

#### Answer: A::B::C::D



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**6.** Which of the following sulphide(s) does/do not liberate  $H_2S$  on warming with dil. HCI?

A. HgS

B. ZnS

C. FeS

D. CuS

## Answer: A::D



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**7.** 
$$I_2$$
 +  $Na_2CO_3$  "soln." →  $X + Y$ 

If 'X' gives coloured ppt. with  $Pb(CH_3COO)_2$  solution, then 'Y' will respond to which of the following ?

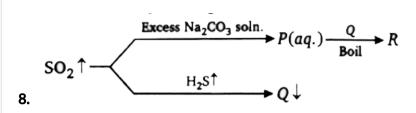
A. 
$$Y + H^+(aq.) + H_2S$$

B. 
$$Y + Cr_2O_7^{2-}(aq.) + OH^{-}(aq.)$$

C. 
$$Y + H^+(aq.) + SO_2$$

D. 
$$Y + H^{+}(aq.) + I^{-}(aq.)$$

## Answer: A::C::D



Incorrect statement about 'R' is

- A. Antichlor agent
- B. Fixing agent in photography
- C. Forms ppt. with CaCl<sub>2</sub> solution
- D. Reduces  $Cu^{2+}(aq)$  cation

#### **Answer: C**



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**9.**  $NO_2$  gas evolves on thermal decomposition of which of the following compound(s)?

A. 
$$Hg(NO_3)_2$$

B. KNO<sub>3</sub>

 $C. N_2O_4$ 

 $D.N_2O_3$ 

## Answer: A::C::D



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10. Which of the following precipitate(s) is/are dissolved to colourless

solution on adding sufficient amount of dilute HCl?

A. CaCO<sub>3</sub>

B.  $BaCrO_4$ 

 $C. MgC_2O_4$ 

D.  $BaSO_4$ 

Answer: A::C

**11.** Which of the following combination of reagent(s) produce observable change in aqueous medium?

A. 
$$Ba(OH)_2$$
 solution+ $SO_2(g)$ 

 ${\tt B.}\, AgF \, {\sf solution+} NaNO_3 \, {\sf solution}$ 

C.  $Pb(OAc)_2$  soution+ $Na_2CO_3$  solution

D.  $CuCl_2$  solution+ $NH_3$  (excess)

Answer: A::C::D



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**12.** Which of the following species is/are not liberating oxygen gas on reaction with water at  $25 \,^{\circ} C$ ?

A.  $Na_2O_2$ 

B.  $Cl_2$ 

 $\mathsf{C}.P_4$ 

D. *KO*<sub>2</sub>

## Answer: B::C



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## 13. Hydrogen gas is not evolved by:

A. 
$$Mg + NH_3(liq.)$$

B. 
$$B_2H_6 + H_2O$$

$$C. NaNH_2 + H_2O$$

D. 
$$Be + H_2O$$

## Answer: A::C::D

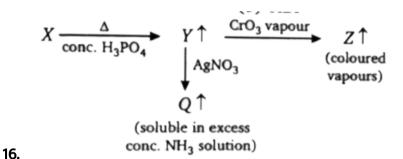


<b>14.</b> Which of the following metal sulphide does not undergo hydrolysis?
A. $Cr_2S_3$
$B.Al_2S_3$
C. MgS
D. FeS
Answer: D
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<b>15.</b> Which of the following gas is not dried by conc. $H_2SO_4$ ?
<b>15.</b> Which of the following gas is not dried by conc. $H_2SO_4$ ?
A. HCl
A. HCl B. HBr

## Answer: B::C



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Which of the following anion cannot be in X?

A. *F* -

B. Cl

C. Br

 $D.I^-$ 

## Answer: A::D



17. When ozone reacts with an excess of potassium iodide solution buffered with a borate buffer (pH 9.2) iodine is liberated which can be titrated against a standard solution of sodium thiosulphate, this is a quantitative method for estimating  $O_3$  gas. when liberated  $I_2$  and sodium thiosulphate will react, then product is/are:

- A.  $S_4O_6^2$
- $B.SO_4^{2}$
- $C. S_2 O_4^{2-}$
- D.  $S^0$

## Answer: A



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**18.** In which of the following reactions  $NH_3$  gas evolution occurs?

$$A. NO_3 + Zn + dil. H_2SO_4 \rightarrow$$

 $C.AlN + steam \rightarrow$ D.  $CH_3COONH_3 \rightarrow$ 

B.  $NH_4^+$  salt +  $NaOH \rightarrow$ 

## Answer: B::C::D



19. Which of the following compound() during heating undergo redox decomposition reaction?

A.  $HgCO_3(s)$ 

C.  $FeCl_3 \cdot 6H_2O(s)$ 

 $B.Ag_2C_2O_4(s)$ 

 $D. K_2 Cr_2 O_7(s)$ 

# Answer: A::B::D



**20.** Which of the following combination of species undergo(es) comproportionation?

$$Zn\frac{\emptyset}{Z}nSO_4$$
  
A.  $MnO_4^-(aq.) + Mn^{2+}(aq.) \rightarrow$ 

warm

$$B.S + conc.H_2SO_4(excess) \rightarrow$$

$$C.PH_3 + H_3PO_4 \rightarrow$$

$$\mathsf{D.}\,NO(g) + NO_2(g) \,\,\rightarrow\,\,$$

Answer: A::D



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**21.** Which of the following combination of species can evolve  $O_2$ ?

A.  $PbO_2$  + warm conc.  $H_2SO_4$ 

B.  $NaOH + F_2$ 

$$C. PbO_2 + conc. HNO_3$$

$$D. XeF_2 + H_2O$$

## Answer: A::B::C::D



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# **22.** $SO_2(g) + Cl_2(g) \rightarrow X \rightarrow Y + Z$

then X, Y and Z can be:

A. SOCl<sub>2</sub>

 $B.SO_2Cl_2$ 

 $C.SO_2$ 

D. PCl<sub>5</sub>

## Answer: B::C::D



23. Which of the following nitrate salt solution neither produce ppt. with excess NaOH nor with excess NH<sub>4</sub>OH solution?

A. 
$$Al(NO_3)_3$$
  
B.  $Zn(NO_3)_2$ 

B. 
$$Zn(NO_3)_2$$

C. 
$$Cr(NO_3)_3$$

D. 
$$Pb(NO_3)_2$$

## Answer: B::C



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24. Which of the following compound(s) give two acids on dissolution in

$$H_2O$$
?

$$A. P_4 O_8$$

$$C.NO_2$$

D.  $C_3O_2$ 

Answer: A::B::C



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$$1:20 \ H_2O \ H_2O \ H_2O$$
 **25.**  $Xe + F_2 \rightarrow X \rightarrow Y \rightarrow Z \rightarrow XeO_3$ 

Select correct option(s) for X, Y, Z and given chemical change:

- A. X, Y and Z are in same oxidation state
- B. All have equal number of lone pair on central atom
- C. All are non-planar
- D. All have equal number of covalent bonds

Answer: A::B::C::D



**26.** Which of the following sulphide(s) does/do not liberate  $H_2S$  on warming with dil. HCl?

A. HqS

B. ZnS

C. FeS

D. CuS

#### Answer: A::D



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# **27.** $I_2$ + $Na_2CO_3$ "soln." $\xrightarrow{Hot}$ X + Y

If 'X' gives coloured ppt. with  $Pb(CH_3COO)_2$  solution, then 'Y' will respond to which of the following?

A. 
$$Y + H^+(aq.) + H_2S$$

B. 
$$Y + Cr_2O_7^{2-}(aq.) + OH^{-}(aq.)$$

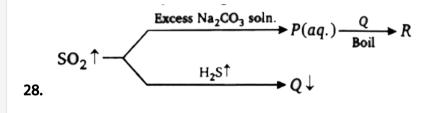
C. 
$$Y + H^+(aq.) + SO_2$$

D.  $Y + H^{+}(aq.) + I^{-}(aq.)$ 

## Answer: A::B::D



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Incorrect statement about 'R' is

- A. Antichlor agent
- B. Fixing agent in photography
- C. Forms ppt. with CaCl<sub>2</sub> solution
- D. Reduces  $Cu^{2+}(aq)$  cation

## **Answer: C**



**29.**  $NO_2$  gas evolves on thermal decomposition of which of the following compound(s)?

A. 
$$Hg(NO_3)_2$$

 $\mathsf{B.}\mathit{KNO}_3$ 

 $\mathsf{C.}\,N_2O_4$ 

D.  $N_2O_3$ 

Answer: A::C::D



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**30.** Which of the following precipitate(s) is/are dissolved to colourless solution on adding sufficient amount of dilute HCI?

A.  $CaCO_3$ 

 ${\sf B.}\, BaCrO_4$ 

C.	$MgC_2O_4$

 $D. BaSO_4$ 

### Answer: A::C



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**31.** Which of the following combination of reagent(s) produce observable change in aqueous medium?

A. 
$$Ba(OH)_2$$
 solution+ $SO_2(g)$ 

B. AgF solution+ $NaNO_3$  solution

C.  $Pb(OAc)_2$  soution+ $Na_2CO_3$  solution

D. CuCl<sub>2</sub> solution+Nh<sub>3</sub> (excess)

### Answer: A::C::D



**32.** Which of the following species is/are not liberating oxygen gas on reaction with water at  $25 \,^{\circ} C$ ?

A.  $Na_2O_2$ 

B.  $Cl_2$ 

 $\mathsf{C}.P_4$ 

D. *KO*<sub>2</sub>

### Answer: B::C



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## **33.** Hydrogen gas is not evolved by:

 $A.Mg + NH_3(liq.)$ 

 $\mathsf{B.}\,B_2H_6+H_2O$ 

 $\mathsf{C.}\,\mathit{NaNH}_2 + H_2O$ 

D.  $Be + H_2O$ 

### Answer: A::B::D



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34. Which of the following metal sulphide does not undergo hydrolysis?

- A.  $Cr_2S_3$
- $B.Al_2S_3$
- C. MgS
- D. FeS

### **Answer: D**



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**35.** Which of the following gas is not dried by conc.  $H_2SO_4$ ?

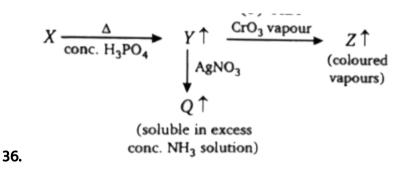
A. HCl

- B. HBr
- $C.H_2S$
- D. *SO*<sub>2</sub>

### Answer: B::C



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Which of the following anion cannot be in X?

- $A.F^{-}$
- B. *Cl*
- C. Br
- $\mathsf{D}.\,I^{\mathsf{-}}$



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**37.** When ozone reacts with an excess of potassium iodide solution buffered with a borate buffer (pH 9.2) iodine is liberated which can be titrated against a standard solution of sodium thiosulphate, this is a quantitative method for estimating  $O_3$  gas. when liberated  $I_2$  and sodium thiosulphate will react, then product is/are:

- A.  $S_4O_6^2$
- $B.SO_4^{2}$
- $C. S_2 O_4^{2-}$
- $D.S^0$

### Answer: A



**38.** In which of the following reactions  $NH_3$  gas evolution occurs?

A. 
$$NO_3 + Zn + dil. H_2SO_4 \rightarrow$$

B. 
$$NH_4^+$$
 salt +  $NaOH \rightarrow$ 

$$C.AlN + steam \rightarrow$$

D. 
$$CH_3COONH_3 \rightarrow$$

### Answer: B::C::D



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**39.** Which of the following compound() during heating undergo redox decomposition reaction?

A. 
$$HgCO_3(s)$$

$$\mathsf{B.}\, Ag_2C_2O_4(s)$$

C. 
$$FeCl_3 \cdot 6H_2O(s)$$

$$D. K_2 Cr_2 O_7(s)$$



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**40.** Which of the following combination of species undergo(es) comproportionation?

$$Zn\frac{\emptyset}{Z}nSO_4$$
  
A.  $MnO_4^-(aq.) + Mn^{2+}(aq.) \rightarrow$ 

varm

$$\mathsf{B.}\,S + conc.\,H_2SO_4(\mathit{excess}) \ \rightarrow$$

$$C.PH_3 + H_3PO_4 \rightarrow$$

cool

$$\mathsf{D.}\,NO(g) + NO_2(g) \,\to\,$$

Answer: A::B



#### Column-I (Ionic Compounds)

- (A) Hg00 1
- (B) FeSO,
- (C) BeC O.
- (D) AgNO,
- 1.

- Column II (Possible observations on thermal (decomposition)
- (P) Acidic gas evolves
- (Q) Metallic residue is obtained as final product
- (R) Metal cation of salt undergoes redox reaction
- (5) Metallic oxide can be obtained
- (T) Neutral gas is evolved



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- (A) Na 2S 2O 3 + dil. HCl
- (B) ICl<sub>3</sub> + H<sub>2</sub>O
- (C) FeCl<sub>3</sub> + H<sub>2</sub>S/H<sup>+</sup>
- (D) H<sub>2</sub>SO<sub>3</sub> <sup>△</sup>

2.



- (P) Disproportionation reaction
- (Q) Yellow ppt.
- (R) Redox reaction
- (S) One of the product gives white fumes with NH<sub>3</sub>



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#### Column-I (Halide compound)

- (A) PCl<sub>1</sub>
- (B) NF<sub>1</sub>
- (C) SbCl<sub>3</sub>
- (D) BF<sub>3</sub>

### Column-II

### (Characteristics)

- (P) Can act as π-acid ligand (Q) Final hydrolysed product is a proton
- donor oxyacid (R) Can act as classical/normal ligand
- (S) Undergoes partial hydrolysis
- (T) Final hydrolysed product has (pπ-pπ) bond

3.



### Column-I (Anions)

- (A) SO 2-
- (B) CO 2
- (C) Cl
- (D) NO 2

4.

#### Column-II

#### [Reaction of anion(s) with dil. HCl/conc. H<sub>2</sub>SO<sub>4</sub>]

- (P) Colourless volatile product is formed
- (Q) Coloured volatile product is formed
- (R) Volatile product forms precipitate with Ba(OH)<sub>2</sub> solution
- (\$) Volatile product forms precipitate with AgNO<sub>3</sub> solution
- (T) Formed volatile product decolourizes MnO<sub>4</sub>/H<sup>\*</sup> solution

0

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#### Co-humn-I

#### (Reaction with Sult/Radical)

- (A) Zn + dil. H<sub>2</sub>SO<sub>4</sub>
- (B) dil. HCl
- (C) NaOH (excess)
- (D) KI

5.

#### Column-II (Salt/Radical)

- (P) Pb(NO<sub>2</sub>)<sub>2</sub>
- $(Q) (NH_4)_2S$
- (R) MnO (aq.)
- (S) Hg 24 (aq.)
- (T) Bi 34 (aq.)



#### Column-I

(Acidic Radicals)

- (A) S2-(aq.)
- (B) SO 3 (aq.)
- (C) NO 2 (aq.)
- (D) S<sub>2</sub>O<sub>3</sub><sup>2</sup> (aq.)

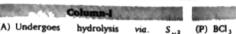
Column-II (Observations)

- (P) Redox reaction with alkaline Br<sub>2</sub>
- (Q) Evolution of diamagnetic gas with dil-HCl on warming
- (R) White ppt. with Pb(CH<sub>3</sub>COO)<sub>2</sub> and pptremains white even after boiling
- (S) Evolution of gas with (Al + NaOH solution).
- (T) Evolution of same gas with dil. HCl as well as with conc. H<sub>2</sub>SO<sub>4</sub> on warming

6.



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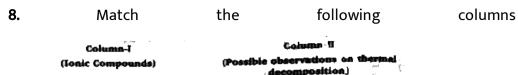


Column-II

- (A) Undergoes hydrolysis mechanism
- (B) Undergoes hydrolysis
- mechanism (C) Hybridisation of central atom in transi-
- tion state changes during hydrolysis (D) Proton donor oxy acid is formed as final
- hydrolysed product
- (Q) NCl<sub>3</sub> (R) SOF<sub>2</sub>
- (S) POCl<sub>3</sub>
- (T) CIF<sub>3</sub>

7.

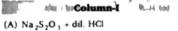




- (decomposition) (P) Acidic gas evolves (A) Hg00 1 (Q) Metallic residue is obtained as final (B) FeSO, product
  - (R) Metal cation of salt undergoes redox
    - (5) Metallic oxide can be obtained
  - (T) Neutral gas is evolved



9. Match the following columns



- (B) ICl<sub>3</sub> + H<sub>2</sub>O
- (C) FeCl<sub>3</sub> + H<sub>2</sub>S/H<sup>2</sup>

(C) BeC O.

(D) AgNO,

(D) H<sub>2</sub>SO<sub>3</sub> →

Column-II

- (P) Disproportionation reaction
- (Q) Yellow ppt. (R) Redox reaction
- (S) One of the product gives white fumes with NH 3



#### Column-I (Halide compound)

- (A) PCl<sub>1</sub>
- (B) NF<sub>3</sub>
- (C) SbCl<sub>3</sub>
- (D) BF<sub>3</sub>

10.

#### Column-II (Characteristics)

- (P) Can act as π-acid ligand
- (Q) Final hydrolysed product is a proton donor oxyacid
- (R) Can act as classical/normal ligand
- (S) Undergoes partial hydrolysis
- (T) Final hydrolysed product has (pπ-pπ) bond



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# (Anions)

- (A) SO<sub>3</sub><sup>2</sup>
- (B) CO 2-
- (C) Cl
- (D) NO;

#### Column-II

#### [Reaction of anion(s) with dil. HCl/conc. H<sub>2</sub>SO<sub>4</sub>]

- (P) Colourless volatile product is formed
- (Q) Coloured volatile product is formed
- (R) Volatile product forms precipitate with Ba(OH)<sub>2</sub> solution
- (\$) Volatile product forms precipitate with AgNO<sub>3</sub> solution
- (T) Formed volatile product decolourizes MnO<sub>4</sub>/H<sup>+</sup> solution

11.



the

following

columns

Co-humn-I

(Reaction with Sult/Radical)

- (A) Zn + dil. H2SO4
- (B) dil. HCI
- (C) NaOH (excess)
- (D) KI

Column-II (Salt/Radical)

- (P) Pb(NO<sub>2</sub>)<sub>2</sub>
- (Q) (NH<sub>4</sub>)<sub>2</sub>S
- (R) MnO (aq.)
- (S) Hg 2 (aq.)
- (T) Bi 3+ (aq.)



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Column-I

(Acidic Radicals)

- (A) S2-(aq.)
- (B) SO<sub>3</sub><sup>2</sup> (aq.)
- (C) NO 2 (aq.)
- (D) S<sub>2</sub>O<sub>3</sub><sup>2-</sup>(aq.)

Column-II

(Observations)

- (P) Redox reaction with alkaline Br<sub>2</sub>
- (Q) Evolution of diamagnetic gas with dil-HCl on warming
- (R) White ppt. with Pb(CH<sub>3</sub>COO)<sub>2</sub> and pptremains white even after boiling
- (S) Evolution of gas with (Al + NaOH solution).
- (T) Evolution of same gas with dil. HCl as well as with conc. H<sub>2</sub>SO<sub>4</sub> on warming

13.



- hydrolysis mechanism
- (B) Undergoes hydrolysis (Q) NCl<sub>3</sub> mechanism
- (C) Hybridisation of central atom in transi-(R) SOF<sub>2</sub> tion state changes during hydrolysis
- (D) Proton donor oxy acid is formed as final (S) POCl<sub>3</sub> hydrolysed product
- (T) CIF, 14.

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### **SUBJECTIVE PROBLEMS**

**1.** Find total number of reagnets which cann produce  $I_2$  from KI solution.

Conc.  $H_2SO_4$ ,  $Hg(NO_3)_2$  solution,  $CuSO_4$  solution, Conc.  $H_3PO_4$ ,

$$K_2Cr_2O_7/H^+$$
,  $Cl_2$  Water,  $Pb(CH_3COO)_2$  solution,  $Ca(OCl)Cl/H^+$ ,  $NaNO$ 



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2. Find total number of metal cations which are ppted as metal sulphide on passing  $H_2S$  gas through metal salt solution.

**3.** Consider the following reaction  $P_A + KOH \rightarrow PH_3 + X$ 

How many P-H bonds are present in species X?

 $Pb^{2+}(aq.)$ ,  $Mn^{2+}(aq.)$ ,  $Sn^{2+}(aq.)$ ,  $Cr^{3+}(aq.)$ ,  $Mg^{2+}(aq.)$ ,  $Hg^{2+}(aq.)$ 

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$$\left(NH_4\right)_2$$
S, Hi,  $Sn^{2+}(aq.)$ ,  $CN^{-}(aq.)$ ,  $NaNO_2$ ,  $SO_2$ ,  $Na_2S_2O_3$ ,  $SCN^{-}$ 

 $Fe^{2+}(aq.)$  at normal condiitions?

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5. Find out number ionic compounds which is/are water insoluble at room temperature

BaSO<sub>4</sub>, AgNO<sub>3</sub>, PbCO<sub>3</sub>, CaCl<sub>2</sub>, Mg(OH)<sub>2</sub>, KMnO<sub>4</sub>, CH<sub>3</sub>COOAg, CaCl<sub>3</sub>, CaCl<sub>4</sub>, Mg(OH)<sub>2</sub>, KMnO<sub>4</sub>, CH<sub>3</sub>COOAg, CaCl<sub>5</sub>, Mg(OH)<sub>2</sub>, CACl<sub>5</sub>, Mg(OH)<sub>2</sub>, CACl<sub>5</sub>, Mg(OH)<sub>2</sub>, M

**4.** Which of the following species/reagent can reduce  $Fe^{3+}(aq.)$  into



**6.** Find the value of expression |x-y| for following compounds.

where,

x=total number of water insoluble salts.

y=total number of salts, which can liberate non-olar acidic gas during their complete thermal decomposition.

 $BaCO_3$ ,  $PbSO_4$ ,  $AgNO_3$ ,  $CaC_2O_4$ ,  $CsHCO_3$ ,  $Na_3PO_4$ ,  $CH_3COOAg$ ,



**7.** Find out total number of coloured compound(s) from following:

 $BaCO_3$ , HgO,  $PbSO_4$ ,  $Ag_2S$ ,  $HgI_2$ , PbO, CdS,  $AgNO_2$ ,  $PbCrO_4$ 



**8.** Find out total number of cation(s) that produce precipitate with aqueous solution of  $Na_2CO_3$ .

 $Cu^{2+}(aq.), Mg^{2+}(aq.), Fe^{3+}(aq.), Pb^{2+}(aq.), Al^{3+}(aq.), Hg^{2+}(aq.), Zn^{2+}(aq.)$ Watch Video Solution



 $\begin{array}{c} \Delta \\ \mathbf{9.} \, P_4 + SOCl_2 \rightarrow \text{ Products} \end{array}$ 

Find out total number of non-planar and polar molecules of products in balanced equation for one mole of  $P_A$ .



given reaction?  $Na_2SO_3 + Na_2S + I_2 \rightarrow \dots + NaI$ 

10. What is average oxidation state state of sulphur in product formed in



11. find out total number of coloured/black water insoluble compound(s) from following substances:

reactions.

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 $PbCl_4$ ,  $Mg(NO_3)_2$ ,  $HgC_2O_4$ ,  $Ag_2CO_3$ ,  $Pb(CN)_4$ ,  $Al(OH)_3$ ,  $Cu(CN)_2$ Watch Video Solution

**13.** How many following Ammonium salts will evolve  $N_2$  gas on heating?

**14.** How many following metals evolve NO (Nitric oxide) gas with dil. HNO<sub>3</sub>

12. Find out total number of compounds which on heating undergo redox

 $Ag_{2}O, HgI_{2}, FeS, Ag_{3}PO_{4}, Ba(MnO_{4})_{2}, Na_{2}CrO_{4}, PbI_{2}, AgNO_{2}, Ag_{2}C_{2}O_{4}$ 

- $(NH_4)_2CO_3, (NH_4)_2Cr_2O_7, NH_4NO_2, NH_4ClO_4, NH_4Cl, (NH_4)_2S, (NH_4)_2C_2C_3$ 
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(20%)? Hq, Cu, Pb, Zn, Fe, Al, Aq, Au, Mn **15.** Find number of basic radicals among the following cations, which can form soluble complex on adding excess of  $N\!H_4$  solution.

 $Cd^{2+}(aq.), Pb^{2+}(aq.), Ni^{2+}(aq.), Mn^{2+}(aq.), Zn^{2+}(aq.), Ag^{+}(aq.), Hg^{2+}(aq.)$ 



**16.** Calculate difference between oxidation state of chromium (Cr) in blue and green coloured chromium species formed during the following given transformation.



**17.** If hydrolysis of interhalogen compound can be represented by following general reaction:

 $XY_{n_1} \rightarrow n_1HY + HXO_{n_2}$ 

Watch Video Solution 18. Total number of species that can be oxidzed by acidic permanganate

If given interhalogen compound is polarr and non-planar, then calculate

ion 
$$\left(MnO_4^{-}/H^{+}\right)$$
.  
 $I^{-}, Fe^{2+}, CO_2, C_2O_4^{2-}, S^{2-}, SO_3^{2-}, NO_2^{2-}, PO_4^{3-}, SO_4^{2-}$ 

**19.** How many following metals evolve  $N_2O$  gas with dil.  $HNO_3$  (20%)



value of  $n_1 + n_2$ .

Cr, Cu, Pb, Zn, Fe, Al, Ag, Au, Mn.

**20.** How many following ammonium salts will evolve  $NH_3$  gas on heating?

 $\left(NH_4\right)_2CO_3$ ,  $\left(NH_4\right)_2Cr_2O_7$ ,  $CH_3COONH_4$ ,  $NH_4ClO_4$ ,  $NH_4Cl$ ,  $\left(NH_4\right)_2S$ ,  $\left(NH_4\right)_2S$ 

21. Find out the number of cation (s) which form(s) black ppt. (soluble in hot and dilute  $HNO_3$ ) on passing  $H_2S$  gas into their salt solution?

 $Mg^{2+}(aq.)Cu^{2+}(aq.), Ba^{2+}(aq.), Fe^{3+}(aq.), Ag^{+}(aq.), Al^{3+}(aq.), Hg^{2+}(aq.),$ 

 $K_2Cr_2O_7/H^+$ ,  $Cl_2$  Water,  $Pb(CH_3COO)_2$  solution,  $Ca(OCl)Cl/H^+$ , NaNO

Conc. 
$$H_2SO_4$$
,  $Hg(NO_3)_2$  solution,  $CuSO_4$  solution, Conc.  $H_3PO_4$ ,

**22.** Find total number of reagnets which cann produce  $I_2$  from KI solution.

23. Find total number of metal cations which are ppted as metal sulphide

on passing  $H_2S$  gas through metal salt solution.  $Pb^{2+}(aq.)$ ,  $Mn^{2+}(aq.)$ ,  $Sn^{2+}(aq.)$ ,  $Cr^{3+}(aq.)$ ,  $Mg^{2+}(aq.)$ ,  $Hg^{2+}(aq.)$  Watch Video Solution

**24.** Consider the following reaction  $P_A + KOH \rightarrow PH_3 + X$ 

How many P-H bonds are present in species X?



**25.** Which of the following species/reagent can reduce  $Fe^{3+}(aq.)$  into  $Fe^{2+}(aq.)$  at normal condiitions?

 $(NH_4)_2$ S, Hi,  $Sn^{2+}(aq.)$ ,  $CN^-(aq.)$ ,  $NaNO_2$ ,  $SO_2$ ,  $Na_2S_2O_3$ ,  $SCN^-$ 

26. Find out number ionic compound(s0 which is/are water insoluble at room temperature

 $BaSO_{4}$ ,  $AgNO_{3}$ ,  $PbCO_{3}$ ,  $CaCl_{2}$ ,  $Mg(OH)_{2}$ ,  $KMnO_{4}$ ,  $CH_{3}COOAg$ ,

**27.** Find the value of expression |x-y| for following compounds.

where,

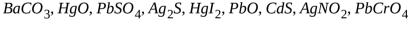
x=total number of water insoluble salts.

y=total number of salts, which can liberate non-olar acidic gas during their complete thermal decomposition.

 $BaCO_3$ ,  $PbSO_4$ ,  $AgNO_3$ ,  $CaC_2O_4$ ,  $CsHCO_3$ ,  $Na_3PO_4$ ,  $CH_3COOAg$ ,

28. Find out total number of coloured compound(s) from following:





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aqueous solution of  $Na_2CO_3$ .  $Cu^{2+}(aq.), Mg^{2+}(aq.), Fe^{3+}(aq.), Pb^{2+}(aq.), Al^{3+}(aq.), Hg^{2+}(aq.), Zn^{2+}(aq.)$ 

29. Find out total number of cation(s) that produce precipitate with



**30.**  $P_4 + SOCl_2 \rightarrow Products$ 

Find out total number of non-planar and polar molecules of products in balanced equation for one mole of  $P_A$ .



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31. What is average oxidation state state of sulphur in product formed in given reaction?

 $Na_2SO_3 + Na_2S + I_2 \rightarrow \dots + NaI$ 



from following substances:  $Ag_{2}O, HgI_{2}, FeS, Ag_{3}PO_{4}, Ba(MnO_{4})_{2}, Na_{2}CrO_{4}, PbI_{2}, AgNO_{2}, Ag_{2}C_{2}O_{4}$ 

**32.** find out total number of coloured/black water insoluble compound(s)



**33.** Find out total number of compounds which on heating undergo redox reactions.

 $PbCl_4$ ,  $Mg(NO_3)_2$ ,  $HgC_2O_4$ ,  $Ag_2CO_3$ ,  $Pb(CN)_4$ ,  $Al(OH)_3$ ,  $Cu(CN)_2$ 



**34.** How many following ammonium salts will evolve  $N\!H_3$  gas on heating?

$$(NH_4)_2CO_3$$
,  $(NH_4)_2Cr_2O_7$ ,  $CH_3COONH_4$ ,  $NH_4CIO_4$ ,  $NH_4CI$ ,  $(NH_4)_2S$ ,  $(NH_4)_2CIO_4$ 



35. How many following metals evolve NO (Nitric oxide) gas with dil.

HNO<sub>3</sub> (20%)?

Hg, Cu, Pb, Zn, Fe, Al, Ag, Au, Mn



 $Cd^{2+}(aq.), Pb^{2+}(aq.), Ni^{2+}(aq.), Mn^{2+}(aq.), Zn^{2+}(aq.), Ag^{+}(aq.), Hg^{2+}(aq.)$ 

and green coloured chromium species formed during the following given transformation.

37. Calculate difference between oxidation state of chromium (Cr) in blue

36. Find number of basic radicals among the following cations, which can

form soluble complex on adding excess of  $NH_A$  solution.



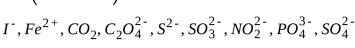
**38.** If hydrolysis of interhalogen compound can be represented by following general reaction:

If given interhalogen compound is polarr and non-planar, then calculate value of  $n_1 + n_2$ .



 $XY_{n_1} \rightarrow n_1HY + HXO_{n_2}$ 

**39.** Total number of species that can be oxidzed by acidic permanganate ion  $\left(MnO_4^{-}/H^{+}\right)$ .





**40.** How many following metals evolve  $N_2O$  gas with dil.  $HNO_3$  (20%) Cr, Cu, Pb, Zn, Fe, Al, Ag, Au, Mn.



**41.** How many following ammonium salts will evolve  $NH_3$  gas on heating?

 $\left(NH_4\right)_2CO_3$ ,  $\left(NH_4\right)_2Cr_2O_7$ ,  $CH_3COONH_4$ ,  $NH_4ClO_4$ ,  $NH_4Cl$ ,  $\left(NH_4\right)_2S$ ,  $\left(NH_4\right)_2CO_3$ 

42. Find out the number of cation (s) which form(s) black ppt. (soluble in

hot and dilute  $HNO_3$ ) on passing  $H_2S$  gas into their salt solution?

 $Mg^{2+}(aq.)Cu^{2+}(aq.), Ba^{2+}(aq.), Fe^{3+}(aq.), Ag^{+}(aq.), Al^{3+}(aq.), Hg^{2+}(aq.),$ 

