

# **CHEMISTRY**

# **BOOKS - OSWAL PUBLICATION**

### **OLYMPIAD 2019 - 20**

# **Chemistry Questions Metal And Non Metals**

**1.** An element Y is a white translucent solid at room temperature and exhibits various allotorpic forms. Some compounds of element

Y find application in agricultural industry. Y forms two solid oxides which dissolve in water to form comparatively weak acids. The element Y is:

- A. Sulphur
- B. Nitrogen
- C. Phosphorous
- D. Carbon

#### **Answer: C**



2. Which of the following are not ionic?

(i)  $AICl_3$  (ii)  $CaCl_2$ 

(iii)  $MgCl_2$  (iv) LiCl

A. (i) and (iv)

B. (i) and (iii)

C. (ii) and (iii)

D. (iii) and (iv)

Answer: A



3. Which of the following is iso-structural with

 $CO_2$  ?

A.  $NO_2$ 

B.  $N_2O_4$ 

C. NO

D.  $N_2O$ 

**Answer: D** 



**4.** A student was studying reactions of metals with dilute NaOH at room temperature. The student took dilute NaOH in four different test tubes and added copper powder to test tube A, zinc dust to test tube B, aluminium powder to test tube C and iron powder to test tube D and observed effervesce in .

- A. Test tubes A & B
- B. Test tubes B & C
- C. Test tubes C & D

D. Test tubes A & D

#### **Answer: B**



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**5.** Which is the correct order of metals with reference to their melting point in increasing order?

A. Hg, Ga, Li, Ca

B. Ca, Li, Ga, Hg

C. Hg, Li, Ga, Ca

D. Hg, Ga, Ca, Li

#### **Answer: A**



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# Chemistry Questions Chemical Reactions And Equations

**1.** What is the ratio of reducing agent to oxidizing agent, if the following reaction is

correctly balanced?

$$NH_3 + O_2 o NO + H_2O$$

A. 4:5

B.5:4

C. 5:3

D. 3:5

#### **Answer: A**



**1.** When four dilute solutions of (1) vinegar, (II) common salt, (III) caustic soda and (IV) baking soda are tested with universal indicator which will be the correct observation.

A. I- Green, II- Violet, III- Blue, IV-Red

B. I- Green, II- Blue, III-Violet, IV-Red

C. I- Red, II- Green, III- Violet, IV- Blue

D. I- Red, II- Violet, III- Green, IV- Blue

**Answer: C** 

**2.** Arrange following solutions in increasing hydronium ion concentration. The solution are

(P) 0.1 M HCI (Q) 
$$0.1MH_2SO_4$$

(R) 
$$0.001MNH_4OH$$
 (S)  $0.001MCa(OH)_2$ .

The correct order will be:

$$\mathsf{A}.\, P > Q > R > S$$

$$\mathsf{B}.\, Q > P > R > S$$

$$\operatorname{C.}S>R>Q>P$$

$$\mathsf{D}.\,S>R>P>Q$$

**Answer: B** 



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# **Chemistry Questions Carbon And Its Compounds**

1. Gammmaxene insecticide powder is prepared by the reaction given in the adjacent box. If 78 g of benzene when reacted with 106.5 g of chlorine, how much Gammaxene would be

formed?

A. 140 g

B. 154.5 g

C. 145.5 g

D. 160 g

#### **Answer: C**



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**2.** How many sigma bonds are present between any two carbon atoms in fullerenes ?

- **A.** 1
- B. 2
- C. 3
- D. 4

**Answer: A** 



**3.** Substance X is white crystalline solid which melts after 10 seconds on burner flame. It is soluble in water and insoluble in  $\mathrm{CCl_4}$ . It is a poor conductor of electricity in molten state as well as in the form of aqueous solution, hence we conclude that substance X is :

A. an ionic compound

B. a non polar covalent compound

C. a polar covalent compound

D. a pure element

#### **Answer: C**



# Chemistry Questions Matter In Our Surroundings

- **1.** Which of the following polymeric material will be ideal for remoulding?
  - A. Polythene and Melamine
  - B. Polyvinyl chloride and Polythene

C. Melamine and Bakelite

D. Bakelite and Polyvinyl chloride

**Answer: B** 



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2. A magician performed following act: He dipped Rs. 50 note in a 50% solution of alcohol in water and held it on the burning flame, but the note did not burn. The reason behind this is:

- A. The alcohol kept on dousing the fire
- B. Air required for burning was not available
- C. The Rs. 50 note failed to reach ignition temperature
- D. The Rs. 50 note is fire proof

#### **Answer: C**



# **Chemistry Questions Structure Of Atom**

**1.** Which of the following species is/are isoelectronic with Neon?

(i) 
$$N^{3\,-}$$
 (ii)  $Mg^{2\,+}$ 

(iii) 
$$K^+$$
 (iv)  $Ca^{2+}$ 

A. only (iv)

B. only (ii)

C. both (i) & (ii)

D. both (i) & (iii)

#### **Answer: C**



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# **Chemistry Questions Atoms And Molecules**

**1.** In one litre of pure water, 44.4 g of calcium chloride is dissolved. The number of ions in one mL of the resultant solution is:

A. 
$$7.23 imes 10^{23}$$

B.  $7.23 imes 10^{20}$ 

C.  $4.82 imes 10^{23}$ 

D.  $4.82 imes 10^{20}$ 

#### **Answer: B**



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**2.** Which of the following gases will have equal volume at STP, if the weight of gases is 14.0 g?

(i)  $N_2O$  (ii)  $NO_2$ 

(iii)  $N_2$  (iv)  ${\sf CO}$ 

A. (i) & (ii)

B. (ii) & (iii)

C. (i) & (iii)

D. (iii) & (iv)

#### **Answer: D**



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**3.** A zinc rod was dipped in  $100cm^3$  of 1M copper chloride solution. After certain time the molarity of  $Cu^{2+}$  ions in the solution was

found to	be C	0.8 N	1. If	the	weight	of	zinc	rod	į

20 g, then the molarity of chloride ions is \_\_\_\_

A. 2M

B. 1.5 M

C. 1M

D. 0.5 M

#### **Answer: A**



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**4.** Sodium tungstate has formula Na,wow lead phosphate has formula  $Pb_3(PO_4)_2$ , formula for lead tungstate should be:

A. 
$$PbWO_4$$

B. 
$$Pb_2(WO_4)_3$$

$$\mathsf{C}.\,Pb \backslash (WO_4)_2$$

D. 
$$Pb_3(WO_4)_4$$

#### **Answer: A**



**5.** In a beaker 50 ml of a normal HCl solution was taken and  $NH_3$  gas was passed through it for some time. The contents of the beaker were then titrated, which required 60 ml of semi normal NaOH solution. How much ammonia was passed through the beaker.

A. 0.85 g

B. 0.34 g

C. 0.51 g

D. 0.4 g

#### **Answer: B**



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# **Chemistry Questions Is Matter Around Us Pure**

1. Four gram of mixture of calcium carbonate and sand is treated with excess of HCl and 0.880 g of carbon-di-oxide is produced. What is the percentage of calcium carbonate in original mixture?

- A. 40~%
- B.  $50\,\%$
- C. 55~%
- D.  $45\,\%$

#### **Answer: B**

