



## CHEMISTRY

### NTA MOCK TESTS ENGLISH

### NTA NEET TEST 81

#### Chemistry

1. Two particles of masses  $m$  and  $2m$  have equal kinetic energies . Their de-Broglie wavelength are in the ratio of

A. 1 : 1

B. 1 : 2

C.  $1 : \sqrt{2}$

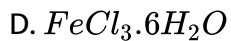
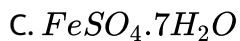
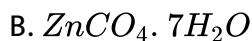
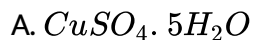
D.  $\sqrt{2} : 1$

**Answer: D**



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2. Which compound has electrovalent, covalent, co-ordinate as well as hydrogen bond ?



Answer: A



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3. An element whose IUPAC name is ununtrium (Uut) belongs to:

A. s - block element

B. p - block element

C. d - block element

D. Transition element

**Answer: B**



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4. Percentage of Se in peroxidase anhydrase enzyme is 0.5 % by weight (at. Weight =78,4), then minimum molecular weight of peroxidase anhydrase enzyme is

A.  $1.568 \times 10^4$  amu

B.  $1.568 \times 10^7$  amu

C.  $1.568 \times 10^3$  amu

D.  $1.568 \times 10^6$  amu

**Answer: A**



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5. Which of the following metal on burring with moist air does not give smell of ammonia ?

A. Mg

B. Ca

C. Na

D. Li

**Answer: C**



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6. Anhydrous aluminium chloride ( $Al_2Cl_6$ ) is covalent compound and soluble in water giving:

A.  $Al^{3+}$  and  $Cl^-$  ions

B.  $[Al(H_2O)_6]^{3+}$  and  $Cl^-$  ions

C.  $[AlCl_2(H_2O)_4]^+$  and  $[AlCl_4(H_2O)_2]^-$  ions

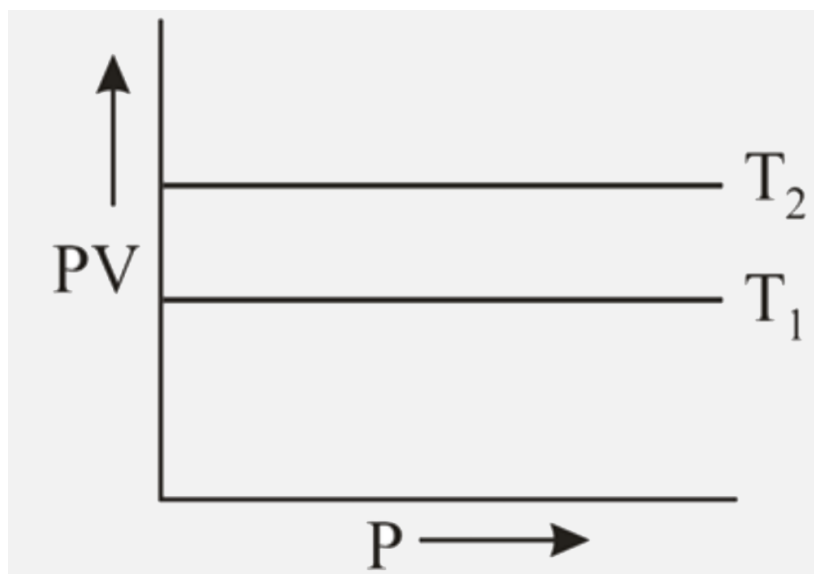
D. none of the above

**Answer: C**



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7. The product (PV) is plotted against P at two temperature  $T_1$  and  $T_2$  and the result is given in following figure



What is correct about  $T_1$  and  $T_2$  ?

A.  $T_1 > T_2$

B.  $T_1 < T_2$

C.  $T_1 = T_2$

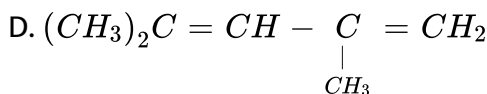
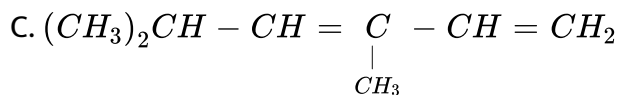
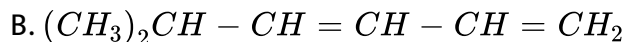
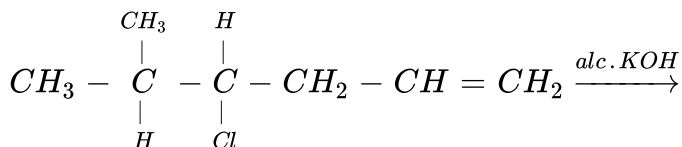
D.  $T_1 \leq T_2$

Answer: B



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8. Predict the product of the reaction



**Answer: B**



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9. An LPG cylinder, containing 15 kg butane at  $27^{\circ}\text{C}$  and 10 atm pressure, is leaking. After one day, its pressure decreased to 8 atm. The quantity of gas leaked is

A. 1 kg

B. 2 kg

C. 3 kg

D. 4 kg

**Answer: C**



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10. Which of the following , when doped into a crystal of ultrapurified germanium , will convert it into a p - type semiconductor ?

A. C

B. As

C. In

D. Na

**Answer: C**



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11. Ammonium dichromate on heating gives

A. NO

B.  $N_2O$

C.  $NO_2$

D.  $N_2$



**Answer: D**



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**12.** Consider the following compounds

1. Phenol
2. o - chlorophenol
3. m - chlorophenol
4. p - chlorophenol

Place these compounds in the decreasing order of acidity

A.  $1 > 2 > 3 > 4$

B.  $2 > 3 > 4 > 1$

C.  $3 > 4 > 1 > 2$

D.  $2 > 3 > 1 > 4$

**Answer: B**



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13. Which of the following is incorrect ?

- A. When  $NO_2$  is dissolved in cold water , a mixture of nitrous and nitric acid is formed
- B. When  $NO_2$  is dissolved in hot water , the same reaction occurs as that in cold water
- C.  $N_2O_5$  is made by the reaction of  $P_4O_{10}$  with nitric acid vapours
- D.  $NO_2$  is very corrosive gas and reacts directly with a number of metals

**Answer: B**



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14. For  $NH_4HS(s) \rightleftharpoons NH_3(g) + H_2S(g)$  If  $K_p = 64 atm^2$ , equilibrium pressure of mixture is

- A. 8 atm
- B. 16 atm
- C. 64 atm
- D. 4 atm

**Answer: B**



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**15.** The pH of 0.1 M solution of the following salts increases in the order.

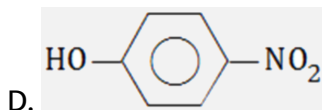
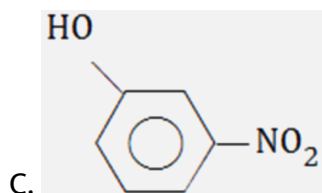
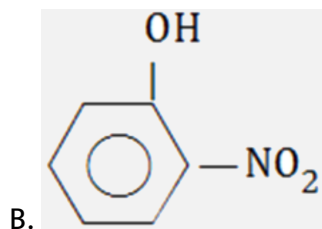
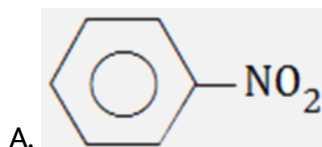
- A.  $KCl < NH_4Cl < NaCN < HCl$
- B.  $HCl < NH_4Cl < KCl < NaCN$
- C.  $NaCN < NH_4Cl < KCl < HCl$
- D.  $HCl < KCl < NaCN < NH_4Cl$

**Answer: B**



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16. Which of the following compounds will have the highest dipole moment ?



Answer: D



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17. Which is not true about metal carbonyls?

- A. Here CO acts as a Lewis base as well as Lewis acid
- B. Here metal acts as Lewis bases as well as as Lewis acid
- C. Here  $d\pi - p\pi$  back bonding takes place
- D. Here  $p\pi - p\pi$  back bonding takes place

Answer: D



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18. Ethanal and propanone undergo condensation reaction in presence of dil. Alkali to form

- A.  $CH_3CH(OH)CH_2COCH_3$
- B.  $CH_3 - CO - C(OH)(CH_3)_2$
- C.  $HOH_2CCH_2CH_2COCH_3$
- D.  $CH_3COCH(CH_3)CH_2OH$

**Answer: A**



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**19.** A liquid is stirred in thermally insulated container , for about 2 hrs.

Which of the following is correct ?

A.  $w < 0, q = 0, \Delta U < 0$

B.  $w < 0, q = 0, \Delta U = 0$

C.  $w < 0, q < 0, \Delta U = 0$

D.  $w < 0, q < 0, \Delta U = 0$

**Answer: A**



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**20.** How many litres of chlorine gas will be obtained by electrolysis of molten NaCl at 1.8 atm and  $27^{\circ}\text{C}$  ? The electrolysis continued for 9.65 sec

using 1000 amp current .

A. 460 L

B. 0.683 J

C. 1800 L

D. 1231.6 L

**Answer: B**



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**21.** The formal charge on the O atoms in the ion  $\left[ :\ddot{O} = N\ddot{O}: \right]^+$  is :

A.  $-2$

B.  $-1$

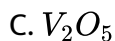
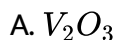
C. 0

D.  $+1$

**Answer: C**

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22. What is the empirical formula of vanadium oxide if 2.74g of the metal oxide contains 1.53g of metal ?



Answer: C

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23.  $CrO_4^{2-}$  (yellow) changes to  $Cr_2O_7^{2-}$  (orange ) in  $pH = y$  . Hence  $x$  and  $y$  are :

A. 6 , 8



B. 6 , 5

C. 8 , 6

D. 7 , 7

**Answer: A**



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**24.** Which one of the following pairs of solution can we expect to be isotonic at the same temperature?

A. 0.1 M urea and 0.1 M NaCl

B. 0.1 M urea and 0.2 M  $MgCl_2$

C. 0.1 M NaCl and 0.1 M  $Na_2SO_4$

D. 0.1 M Ca  $(NO_3)_2$  and 0.1 M  $Na_2SO_4$

**Answer: D**



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25. The molar ratio of  $Fe^{++}$  to  $Fe^{+++}$  in a mixture of  $FeSO_4$  and  $Fe_2(SO_4)_3$  having equal number of sulphate ion in both ferrous and ferric sulphate is

A. 1:2

B. 3:2

C. 2:3

D. none of these

**Answer: B**



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26. The distillation technique most suited for separating glycerol from spent-lye in the soap industry is :

A. Fractional distillation

- B. Simple distillation
- C. Distillation under reduced pressure
- D. Steam distillation

**Answer: C**



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27. How much energy must be supplied to change 36 g of ice at  $0^{\circ}C$  to water at room temperature?

(Given:  $\Delta H_{\text{fusion}}^{\circ}(H_2O) = 6.01\text{kJ /mole}$  and  $C_p$  of liquid form is  $4.18$  .

- A. 12 kJ
- B. 16 kJ
- C. 19 kJ
- D. 22 kJ

**Answer: B**



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**28.** Which of the following properties is not correct to both *Be* and *Al*?

- A. *Be* like *Al* does not dissolve in alkalis
- B. Oxides of both *Be* and *Al* are amphoteric
- C. Beryllium chloride is covalent like aluminium chloride
- D. Carbides of both metals react with water liberating methane

**Answer: A**



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**29.** In an experiment 0.04 F was passed through 400 ml of a 1 M solution of NaCl. What would be the pH of the solution after the electrolysis?

A. 8

B. 10

C. 13

D. 6

**Answer: C**



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**30.** The solubility of calcium phosphate (molecular mass =  $M$ ) in water is  $W$  g per  $100\text{mL}$  at  $25^\circ\text{C}$ . Its solubility product at  $25^\circ\text{C}$  will be approximately-

A.  $10^9 \left( \frac{W}{M} \right)^5$

B.  $10^7 \left( \frac{W}{M} \right)^5$

C.  $10^5 \left( \frac{W}{M} \right)^5$

D.  $10^3 \left( \frac{W}{M} \right)^5$

**Answer: B**



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**31. Which of the following statement is incorrect ?**

- A. Polyethylene contains double bonds
- B. The monomer used to make tetlon is  $C_2F_4$
- C. Condensation polymers are known as copolymers
- D. A denatured protein could have the same primary structure as the active protein

**Answer: A**



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**32. Which statement is incorrect about peptide bond?**

- A. C - N bond length in proteins is longer than usual bond length of C - N bond
- B. Spectroscopic analysis shows planar structure of  $\begin{array}{c} -C- NH- \\ || \\ O \end{array}$  bond
- C. C - N bond length in proteins is smaller than usual bond length of C - N bond
- D. None of these

**Answer: A**



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**33.** Morphine is obtained from \_\_\_\_\_

- A. opium
- B. avena
- C. datura

D. all of these

**Answer: A**



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**34.** The overall rate  $\frac{d[P]}{dt}$ , for the reaction  $2A \xrightleftharpoons{K} B, B + C \xrightarrow{k_f} P$  is given by

A.  $Kk_f[A]^2[C]$

B.  $K[A][B]$

C.  $k_f[B][C]$

D.  $Kk_f[A]^2[B][C]$

**Answer: A**



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35. On heating NaX with  $H_2SO_4$  and  $MnO_2$  the halogens that cannot be prepared is .....

A.  $I_2$

B.  $F_2$

C.  $Cl_2$

D.  $Br_2$

**Answer: B**



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36. A water sample has ppm level concentration of following anions

$$F^- = 10, SO_4^{2-} = 100, NO_3^- = 50$$

The anion/anions that make/makes the water sample unsuitable for drinking is/are:

A. only  $NO_3^-$

B. only  $F^-$

C. only  $SO_4^{2-}$

D. both  $SO_4^{2-}$  and  $NO_3^-$

**Answer: B**



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**37. Which of the given complex species is following EAN rule ?**

A.  $[Ca(EDTA)]^{2-}$

B.  $[Cr(en)_3]^{3+}$

C.  $[CoBr(trien)]^+$

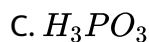
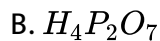
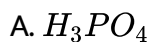
D.  $[Ni(dmg)_2]$

**Answer: C**



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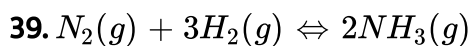
38. Oxyacid of phosphorus that can reduce  $AgNO_3$  to silver is



**Answer: C**



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For the reaction initially the mole ratio was 1 : 3 of  $N_2 : H_2$ . At equilibrium 50% of each has reacted. If the equilibrium pressure is P, the partial pressure of  $NH_3$  at equilibrium is :

A.  $\frac{P}{3}$

B.  $\frac{P}{4}$

C.  $\frac{P}{6}$

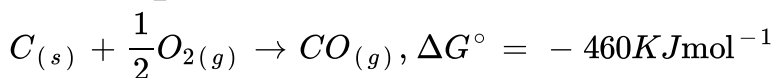
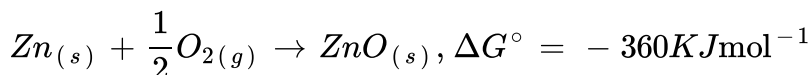
D.  $\frac{P}{8}$

**Answer: A**



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**40.** At  $1000^{\circ}C$ ,



The correct statement is

- A. ZnO is more stable than CO
- B. ZnO can be reduced to Zn by C
- C. ZnO and CO are formed at equal rate
- D. ZnO cannot be reduced to Zn by C

**Answer: B**



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**41.** Substances which alter the velocity of a reaction by mere presence, without undergoing any change in mass and composition are termed catalyst and the phenomenon is known as catalysis

According to the adsorption theory of catalysis, the rate of reaction increases because

- A. adsorption lowers the activation energy of the reaction
- B. concentration of reactant molecules at the active centres of the catalyst becomes high due to adsorption
- C. adsorption produces heat which increases the rate of reaction
- D. adsorption increases the activation energy of the reaction

**Answer: B**



42. A crystal of lead (II) sulphide has NaCl structure . In this crystal the shortest distance between a  $Pb^{2+}$  ion and  $S^{2-}$  ion is 297 pm . What is the volume the of unit cell in lead sulphide ?

A.  $209.6 \times 10^{-24} cm^3$

B.  $207.8 \times 10^{-23} cm^3$

C.  $22.3 \times 10^{-23} cm^3$

D.  $209.8 \times 10^{23} cm^3$

Answer: A



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43. By passing  $H_2S$  gas in acidified  $KMnO_4$  solution, we get

A. S

B.  $MnO_2$

C.  $KHSO_3$

D.  $K_2SO_3$

**Answer: A**



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**44.** Which of the following alkali metals form complex hydrides?

A. Li

B. Na

C. K

D. Both A and B

**Answer: D**



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45. When chlorine gas is passed through an aqueous solution of potassium bromide, the solution turns brown due to the liberation of

- A. chlorine is reduced to chloride ion
- B. of the formation of  $\text{BrCl}$
- C. bromide ion is oxidized to bromine
- D. of the formation of  $\text{Br}_3^-$

**Answer: B**



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