# CHEMISTRY

# BOOKS - NTA MOCK TESTS

# NTA NEET TEST 81

**Chemistry**

**1.** Two particles of masses $m$ and $2m$ have equal kinetic energies. Their de Broglie wavelengths area in the ratio of:

A. $1 : 1$
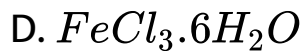
B. $1:2$

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 ?

A. $CuSO_4.5H_2O$

B. $ZnCO_4.7H_2O$

C. $FeSO_4.7H_2O$

D. $FeCl_3.6H_2O$

**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**

**4.** The percentage of Se in peroxides enzyme is 0.5% by mass (atomic mass of Se = 78.4 amu). Then , the minimum molecular mass of enzyme which contains not more than one Se atom 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 burning in moist air does not give smell of ammonia?

A. Mg

B. Ca

C. Na

D. Li

Answer: C

**6.** Anhydrous aluminium chloride $(Al_2Cl_6)$ is covalent compound and soluble in water giving:
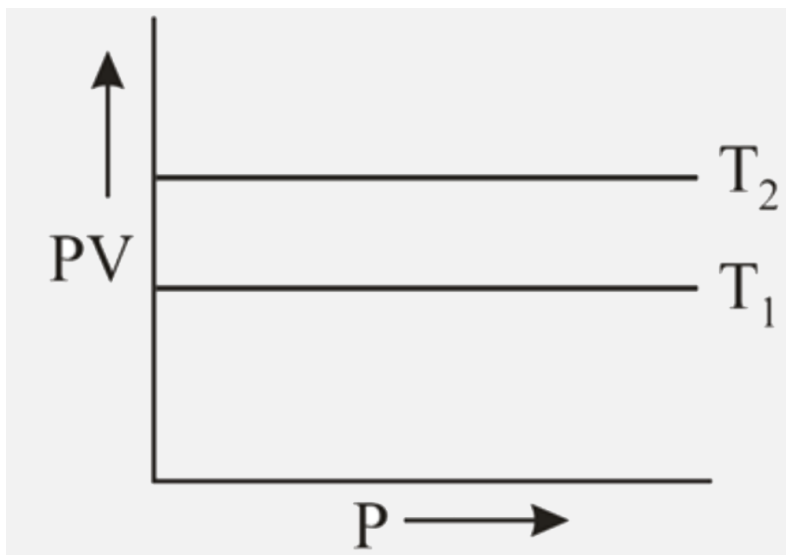
A. $Al^{3+}$ and $Cl^-$ ions

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

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

D. none of the above

Answer: C

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



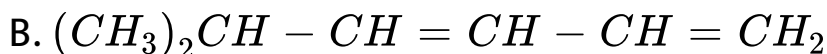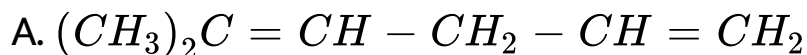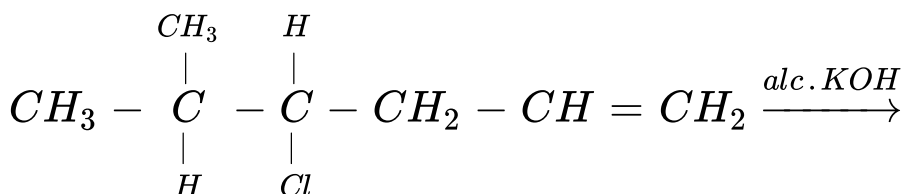What is correct about $T_1$ and $T_2$ ?

A. $T_1 > T_2$

B. $T_1 < T_2$

C. $T_1 = T_2$

D. $T_1 \leq T_2$

**Answer: B**

**8.** Predict the product of the reaction

$$CH_3 - \underset{\underset{H}{|}}{\overset{\overset{CH_3}{|}}{C}} - \underset{\underset{Cl}{|}}{\overset{\overset{H}{|}}{C}} - CH_2 - CH = CH_2 \xrightarrow{alc.KOH}$$

A. $(CH_3)_2 C = CH - CH_2 - CH = CH_2$

B. $(CH_3)_2 CH - CH = CH - CH = CH_2$

C. $(CH_3)_2CH - CH = \underset{\overset{|}{CH_3}}{C} - CH = CH_2$

D. $(CH_3)_2C = CH - \underset{\overset{|}{CH_3}}{C} = CH_2$
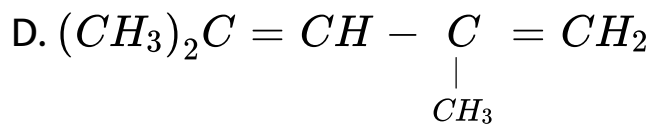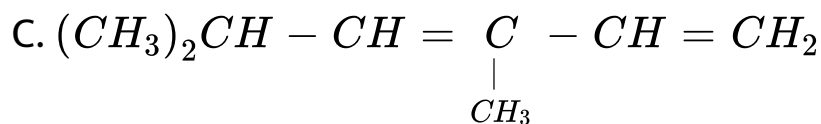
**Answer: B**

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**9.** An $L.\,P.\,G$ cylinder contains $15kg$ of butane gas at $27°C$ and 10 atm pressure It was leaking and its pressure fell down to 8 atm pressure after one day Calculate the amount of leaked gas .

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**

**12.** Consider the following compounds

1. Phenol

2. o - chlorophenol

3. m - chloropheonl

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 $NH_4HS(s) \Leftrightarrow NH_3(g) + H_2S(g)$ , if $K_p = 64atm^2$ , equilibrium pressure of mixture is
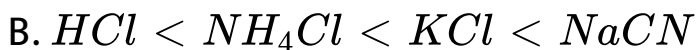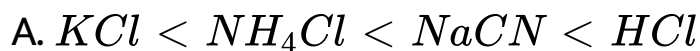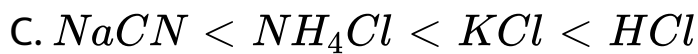
A. 8 atm

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. $HCl < NH_4Cl < KCl < NaCN$

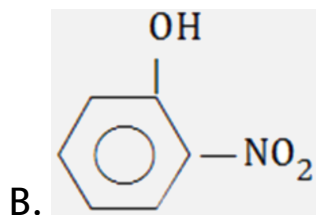C. $NaCN < NH_4Cl < KCl < HCl$

D. $HCl < KCl < NaCN < NH_4Cl$

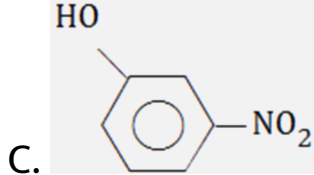**Answer: B**

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

A. 

B. 

C. 

D. 
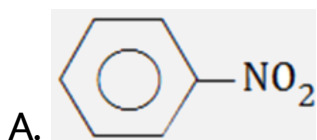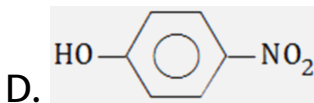
**Answer: D**

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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

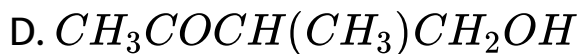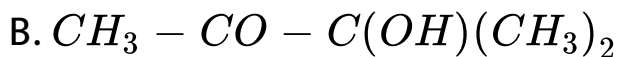C. Here $d\pi - p\pi$ back bonding takes place

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 si correct ?

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

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

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

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

**Answer: A**

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20. How may litres of chlorine gas will be obtained by electrolysis of molten NaCl at 1.8 atm and $27°C$ ? The electrolysis continued for 9.65 sec using 1000 amp current .

A. 460 L

B. 0.683 J

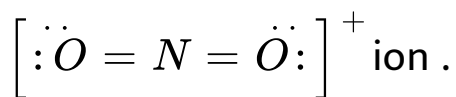C. 1800 L

D. 1231.6 L

**Answer: B**

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

A. $-2$

B. $-1$

C. 0

D. $+1$

**Answer: C**

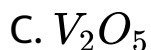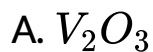> ▶ **Watch Video Solution**

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**22.** What is the emprical formula of vanadium oxide ,

if $2.74g$ of the metal oxide contains $1.53g$ of metal ?

A. $V_2O_3$

B. VO

C. $V_2O_5$

D. $VO_2$

Answer: C

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

A. 6 , 8

B. 6 , 5

C. 8 , 6

D. 7 , 7

Answer: A

**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 ration of $Fe^{++}$ to $Fe^{+++}$ in a mixture of $FeSO_4$ and $Fe_2(SO_4)_3$ having equal number of sulphate ions 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 sited 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 $25^\circ C$?

Data for water

| | |
|---|---|
| $\Delta H^\circ_{\text{fusion}}$ | $6.01 kJ/mol$ |
| $C_{P\ \text{liquid}}$ | $4.18 JK^{-1}g^{-1}$ |

A. 12 kJ

B. 16 kJ

C. 19 kJ

D. 22 kJ

**Answer: B**

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

A. $Be$ like $Al$ does not dissolve in alkalies

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 0.04F was passed through 400mL of 1 M solution of NaCl. What would be the pH of the solution after electrolysis?

A. 8

B. 10

C. 13

D. 6

**Answer: C**

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**30.** Solubility of calcium phosphate (molecular mass, $M$) in water is $Wg$ per $100mL$ at $25°C$. Its solubility product at $25°C$ will be approximately

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

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

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

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

**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

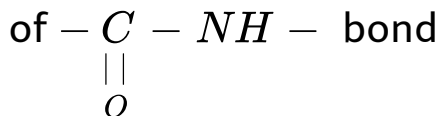D. A denatured protein could have the same primary structure as the active protein

**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 $-\underset{\underset{O}{||}}{C}-NH-$ bond

C. C - N bond length in proteins is smaller than usual bond length of C - N bond

D. None of these

**Answer: A**

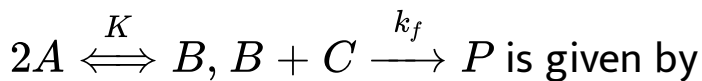**33.** Morphine is obtained from _____

A. opium

B. avena

C. datura

D. all of these

**Answer: A**

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**34.** The overall rate $\dfrac{d[P]}{dt}$, for the reaction $2A \xleftrightarrow{K} B, B + C \xrightarrow{k_f} P$ 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**

**35.** On heating $NaX$ with $H_2SO_4$ and $MnO_2$ the halogen 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

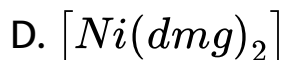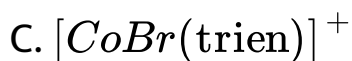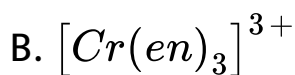A. only $NO_3^-$

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. $[CoBr(\text{trien})]^{+}$

D. $[Ni(dmg)_2]$

**Answer: C**

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

A. $H_3PO_4$

B. $H_4P_2O_7$

C. $H_3PO_3$

D. $HPO_3$

**Answer: C**

**39.** $N_2(g) + 3H_2(g) \Leftrightarrow 2NH_3(g)$
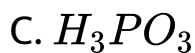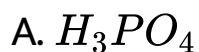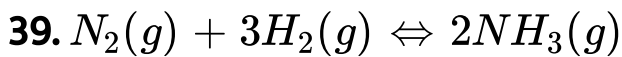
For the reaction intially the mole ratio was $1:3$ of $N_2 : H_2$.At equilibrium 50% of each has reacted .If the equilibrium pressure is P, the parial pressure of $NH_3$ at equilibrium is :

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

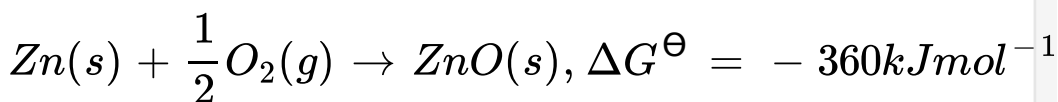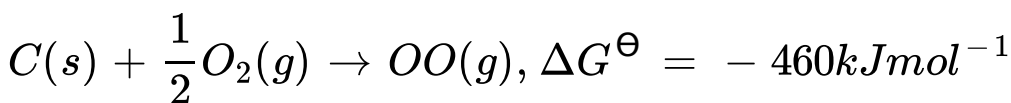B. $\dfrac{P}{4}$

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

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

**Answer: A**

**40.** Consider the following reaction at $1000°C$

(A)

$$Zn(s) + \frac{1}{2}O_2(g) \rightarrow ZnO(s), \Delta G^\ominus = -360kJmol^{-1}$$

(B)

$$C(s) + \frac{1}{2}O_2(g) \rightarrow OO(g), \Delta G^\ominus = -460kJmol^{-1}$$

Choose the correct statement at $1000°C$

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**

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

According to the adsorption theroy 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**

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**42.** PbS has NaCl type structure . The distance

between $Pb^{2+}$ and $S^{2-}$ ions is 297 pm. What is the

volume of unit cell of PbS ?

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

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

C. $22.3 \times 10^{-23} cm^3$
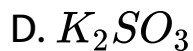
D. $209.8 \times 10^{23} cm^3$

**Answer: A**

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**43.** By passing $H_2S$ gas in acidified $KMnO_4$, 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**

45. When chlorine gas is passed through an aqueous solution of KBr, the solution turns orange brown due to the formation of

A. chlorine is reduced to chloride ion

B. of the formation of BrCl

C. bromide ion is oxidized to bromine

D. of the formation of $Br_3^-$

**Answer: B**

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