



## CHEMISTRY

### BOOKS - NTA MOCK TESTS

#### NTA NEET SET 68

#### Chemistry

1. In chromium (III) chloride  $CrCl_3$  chloride ions have cubic close packed arrangement and Cr (III) ions present in the octahedral voids. What fraction of the octahedral void is occupied? What fraction of the total number of voids is occupied?

A.  $\frac{1}{3}$

B.  $\frac{1}{6}$

C.  $\frac{1}{9}$

D.  $\frac{1}{12}$

**Answer: C**



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2. A solution of sucrose (molar mass =  $342\text{g mol}^{-1}$ ) has been prepared by dissolving 68.5g of sucrose in 1000g of water. The freezing point of the solution obtained will be :

( $K_f$  for water =  $1.86\text{K kg mol}^{-1}$ )

A.  $-0.684^{\circ}\text{C}$

B.  $-0.342^{\circ}\text{C}$

C.  $-0.372^{\circ}\text{C}$

D.  $-0.186^{\circ}\text{C}$

**Answer:**

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**3.** The metal extracted by electrolysis of its fused salt is

A. Iron

B. Lead

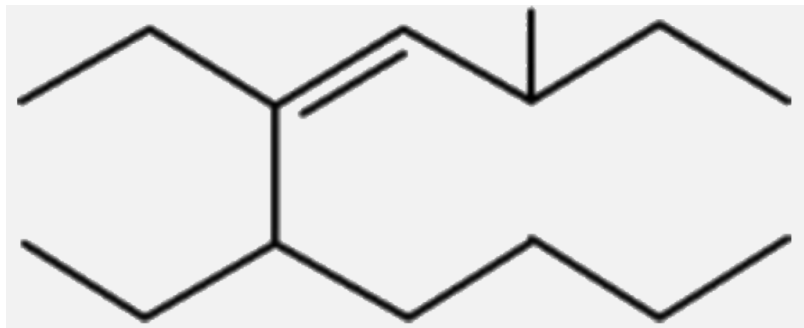
C. Sodium

D. Copper

**Answer: C**

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4. The IUPAC name of the given compound



A. 5,6 - Diethyl - 3 - methyl - 4 - decene

B. 7 - Methyl - 2, 4, 6 - trieneoctanal

C. 6 - Methylheptene

D. 3,3 - Diethyl - 5 - ethyl - 4 decene

**Answer: A**



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5. The gas produced by the passage of air over hot coke is

A. Carbon monoxide

B. Carbon dioxide

C. Producer gas

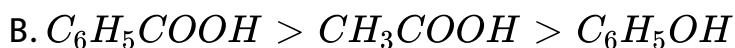
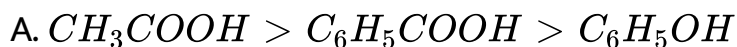
D. Water gas

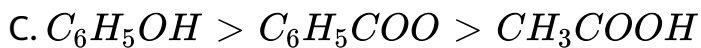
**Answer: C**



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6. Which order is correct about acidity?

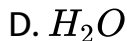




**Answer: B**

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7. The molecule which does not exhibit dipole moment is



**Answer: C**

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8. Artificial sweetner which is stable under cold conditions only is :

A. Saccharine

B. Sucralose

C. Aspartame

D. Alitame

**Answer: C**



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9. When a sulphur sol is evaporated, solid sulphur is left. On mixing with water no colloidal sol is formed. The sulphur sol is

:

- A. Lyophilic
- B. Reversible
- C. Hydrophobic
- D. Hydrophilic

**Answer: C**



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**10. RNA and DNA are chiral molecules, their chirality is due to**

- A. Chiral bases
- B. Chiral phosphate ester units
- C. D - sugar component

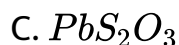


D. L - sugar component

**Answer: C**

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11. A salt on treatment with dil. HCl gives a pungent smelling gas and a yellow precipitate. The salt gives green flame when tested. The solution gives a yellow ppt. with potassium chromate. The salt is



**Answer: B**



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12. The general formula  $C_nH_{2n}O_2$  could be for open chain

A. diketones

B. Carboxylic acids

C. diols

D. dialdehydes

**Answer: B**



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13. If the ionic product of  $\text{Ni}(\text{OH})_2$  is  $1.9 \times 10^{-15}$ , the molar solubility of  $\text{Ni}(\text{OH})_2$  in 1.0 M NaOH is

A.  $3.2 \times 10^{-12}$

B.  $2.0 \times 10^{-13}$

C.  $4.34 \times 10^{-12}$

D.  $0.58 \times 10^{-4}$

**Answer: B**

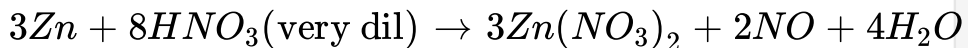


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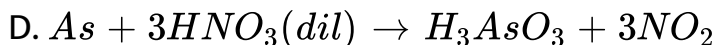
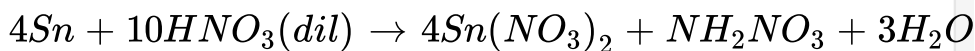
14. In which of the following reactions, the product(s) given is/are not correct?



B.



C.



**Answer: B**



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15. At  $35^\circ C$ , the vapour pressure of  $CS_2$  is 512 mm Hg and that of acetone is 344 mm Hg. A solution of  $CS_2$  in acetone has a total vapour pressure of 600 mm Hg. The false statement amongst the following is

- A. A mixture of 100 ml of acetone and 100 ml of  $CS_2$  has a total volume of 200 ml.
- B. When acetone and  $CS_2$  are mixed at  $35^\circ C$ , heat must be absorbed in order to produce a solution at  $35^\circ C$
- C. When acetone and  $CS_2$  are mixed at  $35^\circ C$ , heat is released.
- D. Raoult's law is obeyed by both,  $CS_2$  and acetone for the solution in which the moles fraction of  $CS_2$  is 0.25

**Answer: B**



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16. For an ideal gas, number of moles per litre in terms of its pressure P, gas constant R and temperature T is

A.  $\frac{PT}{R}$

B. PRT

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

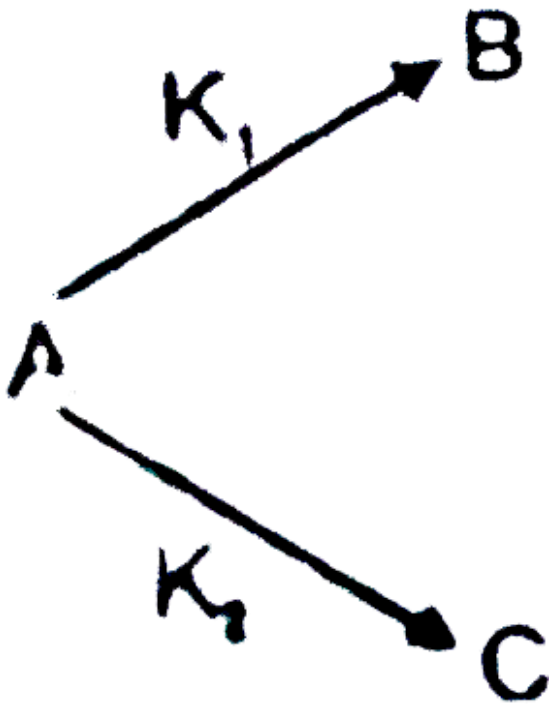
D.  $\frac{RT}{P}$

**Answer: C**



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17. A substance undergoes first order decomposition involving two parallel first order reaction as :



The mole percent of B in the products is :

- A. 23.17
- B. 77
- C. 30.16
- D. 69.84

**Answer: B**



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18. If  $\Delta G = \Delta H - T\Delta S$  and  $\Delta G = \Delta H + T \left[ \frac{d(\Delta G)}{dT} \right]$ ,  
then variation EMF of a cell E, with temperature T, is given by

A.  $\frac{\Delta H}{nF}$

B.  $\frac{\Delta G}{nF}$

C.  $\frac{\Delta S}{nF}$

D.  $\frac{-\Delta S}{nF}$

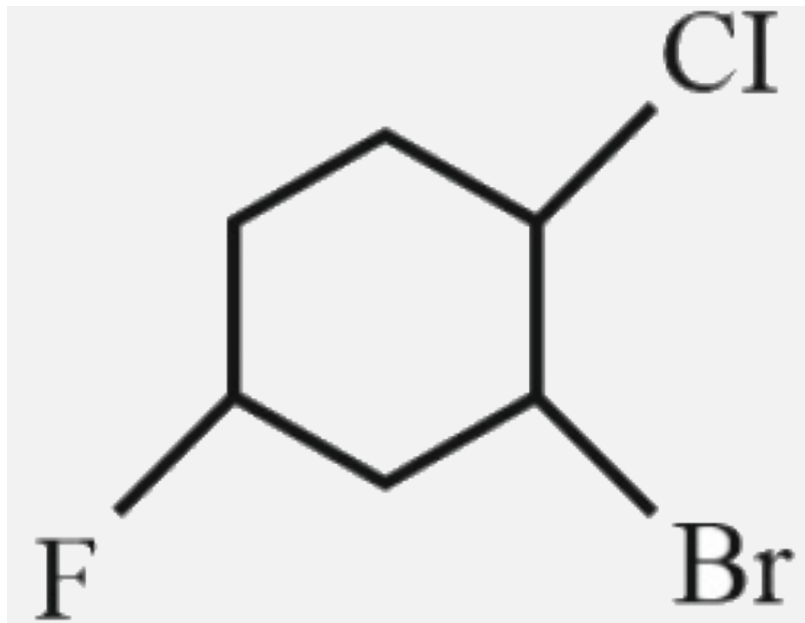
**Answer: C**



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19. Determine the total number of stereoisomers.



A. 2

B. 4

C. 8

D. 16

Answer: C



20. When 9.65 coulomb of electricity is passed through a solution of silver nitrate (Atomic mass of Ag =  $108 \text{ g mol}^{-1}$ , the amount of silver deposited is :

- A. 5.8 mg
- B. 10.8 mg
- C. 15.8 mg
- D. 20.8 mg

**Answer: B**



21. Which of the following is not a characteristic property of chemical equilibrium?

A. Rate of forward reaction is equal to rate of backward reaction at equilibrium

B. After reaching the chemical equilibrium the concentrations of reactants and products remain unchanged with time

C. For  $A(g) \rightleftharpoons B(g)$ ,  $K_c$  is  $10^{-2}$ . If this reaction is carried out in the presence of catalyst, the value of  $K_c$  decrease

D. After reaching the equilibrium, both forward and backward reaction continue to take place

**Answer: C**

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**22.** The probability of finding the electron in the orbital is

A. 100 %

B. 90 – 95 %

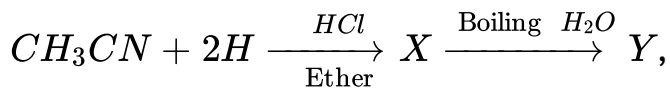
C. 70 – 80 %

D. 50 – 60 %

**Answer: B**

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23. In the reaction



the term Y is

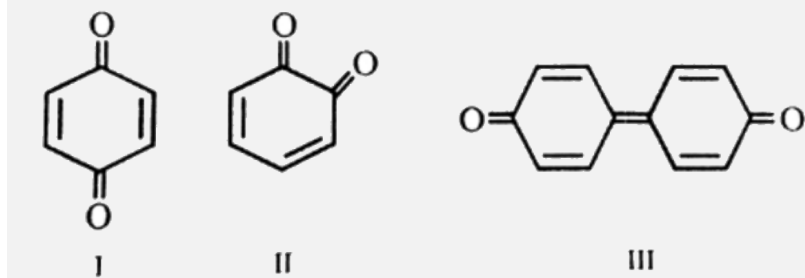
- A. Acetone
- B. Ethanamine
- C. Acetaldehyde
- D. Dimethyl amine

**Answer: C**



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24. The correct stability order of the following three quinones is



A.  $I > III > II$

B.  $I = III > II$

C.  $I = II > III$

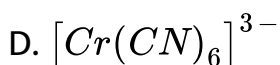
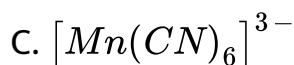
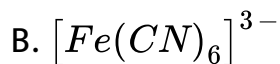
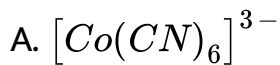
D.  $III > I > II$

**Answer: D**

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25. Which one of the cyano complexes would exhibit the lowest value of para magnetic behaviour ?

(At. No. Cr = 24, Mn = 25, Fe = 26, Co = 27)



**Answer: A**



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**26.** Which of the following reagent used to identify fructose ?

A. Neutral  $FeCl_3$

B.  $CHCl_3$  / alc KOH

C. Ammoniacal  $AgNO_3$

D. Iodine

**Answer: C**

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27. The heat of neutralization of NaOH with HCl is 57.3 KJ and with HCN is 12.1 KJ. The heat of ionization of HCN is

A. + 69.4 KJ

B. + 45.2 KJ

C. - 45.2 KJ

D. - 69.4 KJ

**Answer: B**

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28. Determine the oxidation number of Xe atom in  $Ba_2XeO_6$

A. +8

B. -8

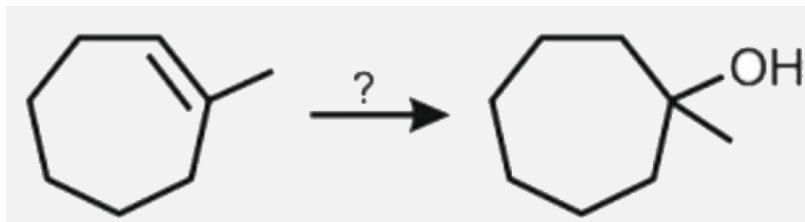
C. +5

D. -7

Answer: A

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29. Which is the best combination of reagent for the reaction



A.  $KMnO_4$ ,  $H_3O^+$

B. *m* - CPBA,  $CH_2Cl_2$

C. (i) 9-BBN (ii)  $NaOH$ ,  $H_2O_2$

D. (i)  $Hg(OAc)$ ,  $H_2O$  (ii)  $NaBH_4$

**Answer: D**



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**30.** C-Cl bond is stronger than C-I bond , because

A. C - Cl bond is more ionic than C - I

B. C - Cl bond is polar covalent bond

C. C - Cl bond is more covalent than C - I

D. C - Cl bond length is longer than C - I

**Answer: A**

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**31.** The molecular formula of a non - stoichiometric tin oxide containing Sn (II) and Sn (IV) ions is  $Sn_{4.44}O_8$ .

Therefore , the molar ratio of Sn (II) to Sn (IV) is approximately

A. 1 : 8

B. 1 : 6

C. 1 : 4

D. 1 : 1

**Answer: C**

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32. 99 % at a first order reaction was completed in 32 min .

When will 99.9 % of the reaction complete.

A. 24 min

B. 8 min

C. 4 min

D. 48 min

**Answer: D**



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33. In an octahedral structure , the pair of d orbitals involved in  $d^2sp^2$  hybridization is

A.  $d_{x^2-y^2}$ ,  $d_z^2$

B.  $d_{xz}, d_{x^2 - y^2}$

C.  $d_{z^2}, d_{xz}$

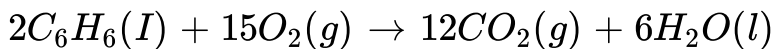
D.  $d_{xy}, d_{yz}$

**Answer: A**



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**34.** The difference between heat of reaction and change in internal energy at constant volume for the reaction given below at  $25^\circ C$  in kJ is



A.  $-7.43$

B.  $+3.72$

C.  $-3.72$

D. + 7.43

**Answer: A**

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**35.** The bond angle H-X-H is the greatest in the compound :

A.  $PH_3$

B.  $CH_4$

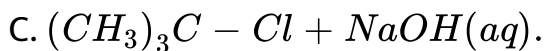
C.  $NH_3$

D.  $H_2O$

**Answer: B**

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36. Which of the following reaction follows  $S_N1$  mechanism ?



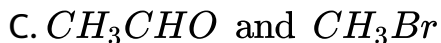
Answer: C



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37. HBr reacts with  $H_2C = CH - OCH_3$  under anhydrous conditions at room temperature to give:



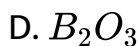
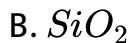


**Answer: B**



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**38.** Which of the following oxides is not expected to react with sodium hydroxide ?





**Answer: A**



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**39.** One atomic mass is equal to

A.  $1.66 \times 10^{-27} g$

B.  $1.66 \times 10^{-24} g$

C.  $1.66 \times 10^{-23} g$

D.  $1.66 \times 10^{-25} g$

**Answer: B**



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40. The formation of  $O_3$  in upper part of atmosphere is catalyzed by

A.  $N_2$

B.  $NO$

C.  $CO$

D.  $CO_2$

**Answer: B**



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41. Which is the major product formed when acetone is heated with iodine and potassium hydroxide ?

A. Acetophenone

B. Iodoform

C. Iodoacetone

D. Acetic acid

**Answer: B**



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**42.** The basic character of  $MgO$  ,  $BaO$ , and  $Na_2O$  and  $FeO$  follow the order

A.  $MgO < FeO < BaO < Na_2O$

B.  $FeO < MgO < Na_2O < BaO$

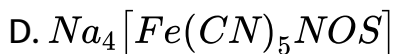
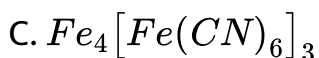
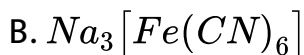
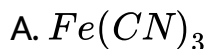
C.  $FeO < MgO < BaO < Na_2O$

D.  $Na_2O < MgO < FeO < BaO$

Answer: C

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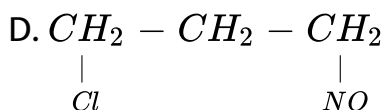
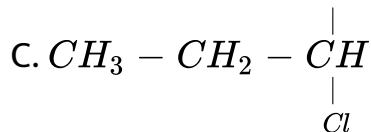
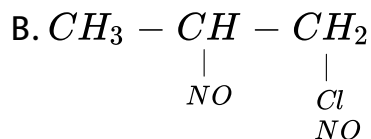
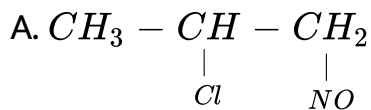
43. The compound formed in the positive test for nitrogen with Lassaigne's solution of an organic compound is



Answer: C

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44.  $CH_3 - CH = CH_2 + NOCl \rightarrow P$ , Identify the adduct.



Answer: A

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45. Which one of the following has strongest metallic bonding

?

A. Fe

B. Sc

C. V

D. Cr

**Answer: D**



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