



## CHEMISTRY

### BOOKS - NTA MOCK TESTS

#### NTA NEET SET 70

#### Chemistry

1. The ratio of angular momentum of electron in two successive orbit is  $a$  ( $a > 1$ ) and their difference is  $b$ . Then  $\frac{a}{b}$  is equal to

A.  $\frac{n}{n+1}$

B.  $\frac{n+1}{n}$

C.  $\frac{n+1}{n} \cdot \frac{h}{2\pi}$

D.  $\left(\frac{n+1}{n}\right) \cdot \frac{2\pi}{h}$

**Answer: D**

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2. How many moles of  $Na^+$  ions are in  $20\text{ mL}$  of  $0.40\text{ M } Na_3PO_4$ .

A. 0.008

B. 0.024

C. 0.05

D. 0.20

**Answer: B**

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3. What is common in HCP and FCC unit cell ?

- A. octahedral voids are completely inside the unit cell
- B. tetrahedral voids are completely inside the unit cell
- C. Number of layers constituting the unit cell are same
- D. None of these

**Answer: D**

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4. If  $EA_1$  and  $EA_2$  for oxygen atom  $-142kJmol^{-1}$  and  $+844kJmol^{-1}$ . The energy released from  $2O + 2e^- \rightarrow 2O^-$  will be

- A.  $-986kJmol^{-1}$
- B.  $-702kJmol^{-1}$
- C.  $-284kJmol^{-1}$
- D.  $-1688kJmol^{-1}$

**Answer: C**

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5. Bond order of  $N_2^+$  and  $N_2^-$  are same. Which relation is correct for  $N_2^+$  and  $N_2^-$  ?

A. Bond energy of  $N_2^+$  = bond energy of  $N_2^-$

B. Bond energy of  $N_2^+$  > bond energy of  $N_2^-$

C. Bond energy of  $N_2^+$  < bond energy of  $N_2^-$

D. Bond energy of  $N_2^+$   $\geq$  bond energy of  $N_2^-$

**Answer: B**

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6. Molisch's test given by

A. Carbohydrates

B. Lipids

C. Amino acid

D. Proteins

**Answer: A**



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7. The nucleophilicity of  $F^-$  is higher in case of

A. water

B. ethanol

C. DMSO

D. acetone

**Answer: C**



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8. If the freezing point of a 0.01 molal aqueous solution of a cobalt (III) chloride-ammonia complex (which behaves as a strong electrolyte) is  $-0.0558^{\circ}C$ , the number of chloride (s) in the coordination sphere of the complex if  $[K_f \text{ of water} = 1.86Kkgmol^{-1}]$

A. 1

B. 2

C. 4

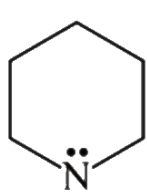
D. 3

**Answer: D**

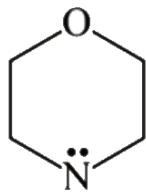


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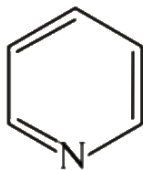
9. Find the order of basic character of the following structure.



(I)



(II)



(III)



(IV)

A.  $II > I > IV > III$

B.  $III > IV > I > II$

C.  $IV > II > II > I$

D.  $I > II > III > IV$

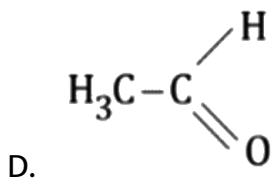
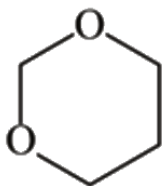
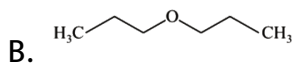
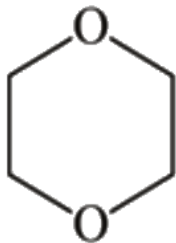
Answer: D



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10. Dehydration of ethylene glycol in presence of concentration

$H_2SO_4$  will give



Answer: A

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11. Which of the following are thermoplastic polymers ?



A. Polythene , urea - formaldehyde , polyvinyls

B. Bakelite , polythene, polystyrene

C. Polythene , polystyrene , polyvinyls

D. Urea - formaldehyde , polystyrene , bakelite

**Answer: C**



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12. The solubility of  $Pb(OH)_2$  in pure water in pure water is  $\frac{20}{3} \times 10^{-6} M$ . Calculate concentration of  $OH^-$  ion in a buffer solution of  $P^H = 8$ .

A.  $\frac{20}{3} \times 10^{-6} M$

B.  $\frac{10}{3} \times 10^{-6} M$

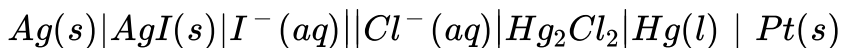
C.  $10^{-6} M$

D.  $2 \times 10^{-6} M$

Answer: C

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13. The overall reaction electrochemical cell at 298K.

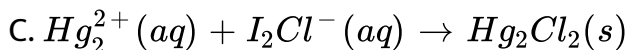
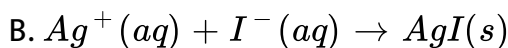
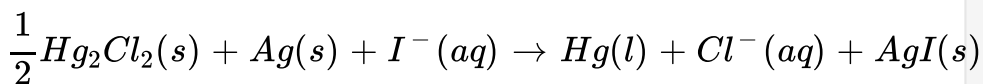


[Given:  $E_{Cl^- | Hg_2Cl_2 | Hg}^\circ = 0.26V$ .  $E_{Ag^+ | Ag}^\circ = 0.8V$ .

$$K_{sp}(AgI) = 10^{-16} \text{ and } \frac{2.303RT}{F} = 0.06]$$

The overall reaction occurring in the above cell is:

A.



D. Cell reaction is not possible

Answer: A



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14. The colour of potassium dichromate is due to

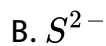
- A. d - d transition
- B. transition in  $K^+$  ion
- C. ligand- to - metal charge transfer
- D. metal to ligand charge transfer

Answer: C



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15. A substance on treatment with dil.  $H_2SO_4$  liberates a colourless gas which produces (i) turbidity with baryta water and (ii) turns acidified dichromate solution green. The reaction indicates the presence of



**Answer: C**

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**16.** A crystalline solid of a pure substance has a face-centred cubic structure with a cell edge of 400 pm. If the density of the substance in the crystal is  $8\text{gcm}^{-3}$ , then the number of atoms present in 256g of the crystal is  $N \times 10^{24}$ . The value of  $N$  is

A. 4

B. 2

C. 3

D. 5

**Answer: B**

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17. Van't Hoff's equation for a chemical reaction under equilibrium is given by standard reaction enthalpy at temperature  $T$  and  $K$  is the equilibrium constant. Predict how  $K$  will vary with temperature for an exothermic

- A.  $K$  decreases as the temperature rises
- B.  $K$  is remain unchanged
- C.  $K$  increases as the temperature rise
- D. Information is not sufficient

**Answer: A**



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18. Phenol on reaction with  $H_2SO_4$  at high temperature gives mainly

- A. o - phenol sulfonic acid
- B. para - phenol sulfonic acid
- C. meta - phenol sulfonic acid
- D. none of these

**Answer: B**



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19. Which of the following statements is not correct ?

- A. Cu liberates  $H_2$  atom acid

B. In its higher oxidation states , Mn forms stable compounds with oxygen and fluorine

C.  $Mn^{3+}$  and  $Co^{+}$  are oxidising agents in aqueous solution

D.  $Ti^{2+}$  and  $Cr^{2+}$  are reducing agents in aqueous solution

**Answer: A**



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20. If the dipole moment of HCl is 1.08 D and the bond distance is 1.27Å, the partial charge on hydrogen and chlorine , respectively are

A. +1.0 and - 1.0

B. +.85 and - .85

C. +0.356 and - 0.356

D. +0.177 and - 0.177

Answer: D

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21. It is easier to liquefy ammonia than oxygen because

- A. it is easier to compress oxygen than  $NH_3$
- B.  $NH_3$  has a very low critical temperature as compared to  $O_2$
- C.  $O_2$  has higher value of Van der Waal's constant  $a$  and higher critical temperature than  $NH_3$
- D.  $NH_3$  has a higher value of Van der Waals constant  $a$  and critical temperature than oxygen

Answer: D

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22. For the elementary reaction  $M \rightarrow N$ , the rate of disappearance of  $M$  increases by a factor of 8 upon doubling the concentration of  $M$ . The order of the reaction with respect to  $M$  is

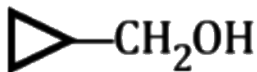
- A. 4
- B. 3
- C. 2
- D. 1

**Answer: B**

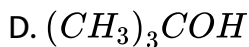
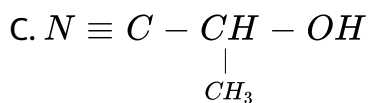
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23. Which of the following alcohols do not give white turbidity on treatment  $HCl / ZnCl_2$ ?

- A.  $CH_3CH_2OH$



B.



**Answer: C**

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24. Choose the incorrect statement .

A. The p - character in the hybrid orbital of nitrogen in borazole  
(also called barazine) is more than that in the hybrid orbital of  
N in  $\text{NH}_3$

B. Borazole exhibit resonance

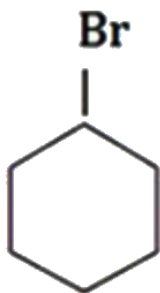
C. The Lewis acid character of boron in borazole is less than that in  $BF_3$

D. Borazole molecule has conjugated structure resulting from intermolecular acid - base reaction

**Answer: A**

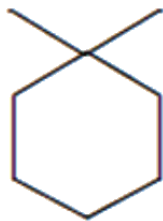
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25. Which is the most reactive alkyl halide for the following reaction?  
?



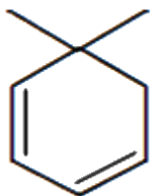
A.

Br



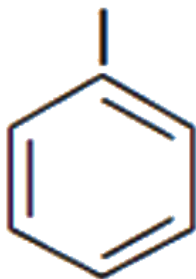
B.

Br



C.

Br



D.

Answer: C



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26. Which of the following metal on burning in moist air does not give smell of ammonia?

A. Mg

B. Ca

C. K

D. Li

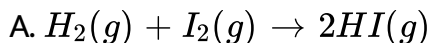
Answer: C

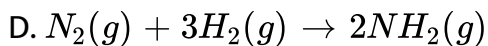
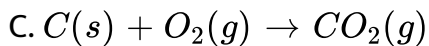
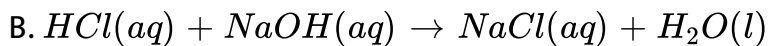


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27. For which of the following change  $\Delta H \neq \Delta E$ ?

(Where  $\Delta H$  is change in enthalpy,  $\Delta E$  is change in internal energy).





**Answer: D**

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**28.** Calculate the wavelength emitted during the transition of an electron in between two level of  $Li^{2+}$  ion whose sum is 4 and difference is 2.

A.  $1.14 \times 10^{-6}m$

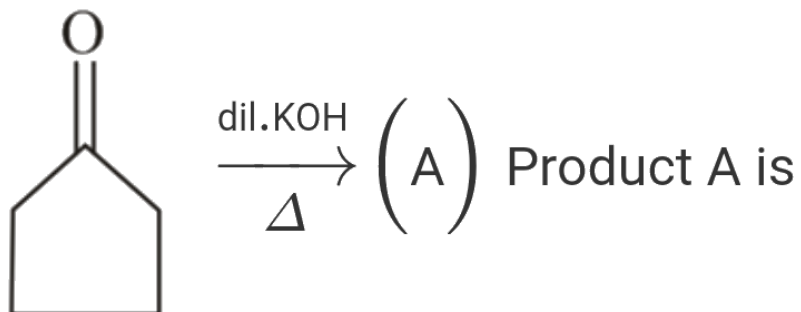
B.  $2.4 \times 10^{-6}m$

C.  $5.2 \times 10^{-6}m$

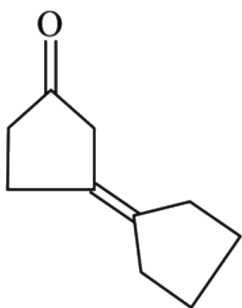
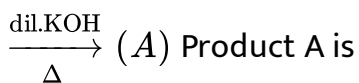
D.  $3.11 \times 10^{-6}m$

Answer: A

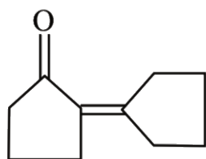
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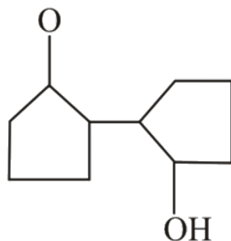
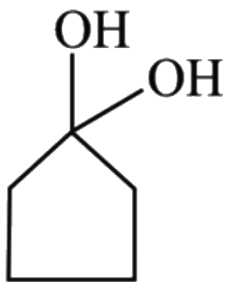
29.



A.



B.



**Answer: B**

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**30.** Order of rate of reaction of following compounds with  $AgNO_3$  (following  $S_N1$  mechanism).

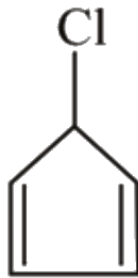




(I)



(II)



(III)

A.  $II > III > I$

B.  $III > II$

C.  $I > II > III$

D.  $III > I > II$

**Answer: C**

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31. If  $x_1$ ,  $x_2$  and  $x_3$  are enthalpies of  $H - H$ ,  $O = O$  and  $O - H$  bonds respective, and  $x_4$  is the enthalpy of vaporisation of water, estimate the standard enthalpy of combustion of hydrogen.

A.  $x_1 + \frac{x_2}{2} - 2x_3 + x_4$

B.  $x_1 + \frac{x_2}{2} - 2x_3 - x_4$

C.  $x_1 + \frac{x_2}{2} - x_3 + x_4$

D.  $2x_3 - x_1 - \frac{x_2}{2} - x_4$

**Answer: B**



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**32.** Which metal will give blue colour metaborate in borax bead test ?

A. Cu

B. Fe

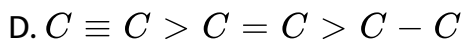
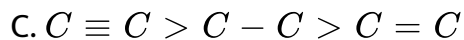
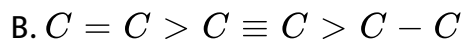
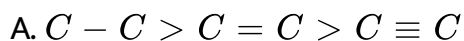
C. Cr

D. Ni

Answer: A

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33. Which is the correct order of bond energy of single, double and triple bonds between carbon atoms ?



Answer: D

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34. select the correct statement set ? (1) Bis - (glycinato) Zinc (II) is optically active

(2)  $[NiCl_4]^{2-}$  and  $[PtCl_4]^{2-}$  differ in shapes

(3)  $[Ni(CN)_4]^{2-}$  and  $[Ni(CO)_4]$  have same magnetic moment

(4) Cis  $[Co(NH_3)_2(en)_2]$  cannot show optical activity

A. 1,2

B. 1,3

C. 1,2,3

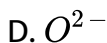
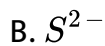
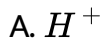
D. 1,3,4

Answer: C

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35. Arsenic sulphide sol is prepared by passing  $H_2S$  through  $As_2O_3$  solution . The charge developed on sol particles is due to the

adsorption of



**Answer: B**



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**36.** You are given a  $10^{-5}$  M NaCl solution and  $10^{-8}$  M  $AgNO_3$  solution . They are mixed in 1:1 volume ratio .  
 $K_{sp}(AgCl) = 10^{-5} M^2$  Choose the correct statement.

A. Precipitation will take place

B. Precipitation will not take place

C. Cannot be determined

D. After 1 hour precipitation will take place

**Answer: B**

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**37.** During refining of liquid iron to steel , CaO plays various roles, out there which of the following is most important

A. To make a slag with  $SiO_2$  formed

B. To prevent oxidation of sulphur

C. To prevent higher concentration of phosphorus in steel

D. To make a very fluid slag

**Answer: C**

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38. Which of following statement is not correct ?

- A. Only  $\alpha$  - amino acids are obtained on hydrolysis of proteins
- B. The amino acids which are synthesised in the body are known as non - essential amino acids
- C. There are 20 essential amino acids
- D. L - amino acids are represented by writing the  $-HN_2$  group on the left side

Answer: C

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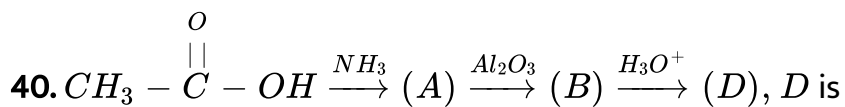
39. 2.5 litre of  $1MNaOH$  solution is mixed with another 3 litre solution of  $0.5MNaOH$  solution. Then the molarity of the resulting

solution is

- A. 1 M
- B. 0.84 M
- C. 0.73 M
- D. 0.56 M

**Answer: C**

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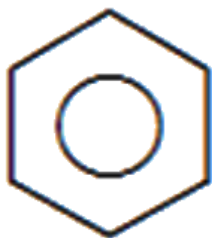
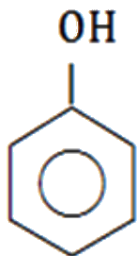
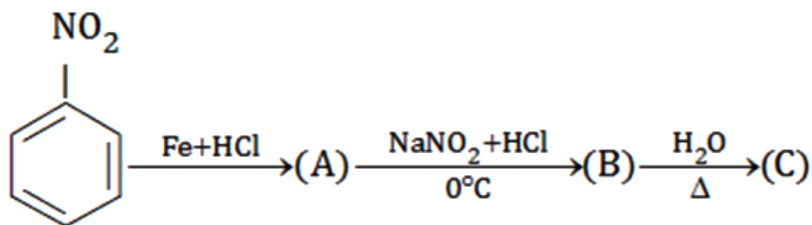
- A.  $CH_3NH_2$
- B.  $CH_3COOH$
- C.  $CH_3CH_2COOH$
- D.  $CH_3CH_2NH_2$

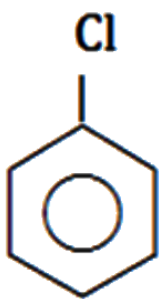


Answer: B

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41. Complete the following reaction





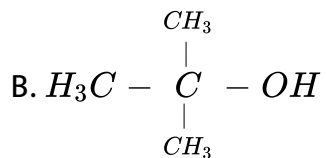
C.

D. None of these

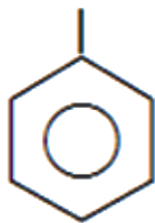
**Answer: A**

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42. Lieberman test is given by which of the following

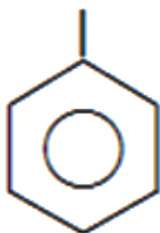


COOH



C.

OH



D.

Answer: D

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43. Name the structure of silicate in which two oxygen atoms of  $[SiO_4]^{4-}$  are shared.

A. Pyrosilicate

B. Sheet silicate

C. Linear chain silicate (single)

D. Three dimensional silicate

**Answer: C**



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**44.** A diabetic person carries a packet of glucose with him always because

A. glucose increases the blood sugar level slowly

B. glucose reduces the blood sugar level

C. glucose increases the blood sugar level almost instantaneously

D. glucose reduces the blood sugar level slowly

**Answer: C**

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45. Which of the following amino acids do not give purple colour on reaction with ninhydrin ?

- A. Proline
- B. alanine
- C. glycine
- D. both A and B

**Answer: A**

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