



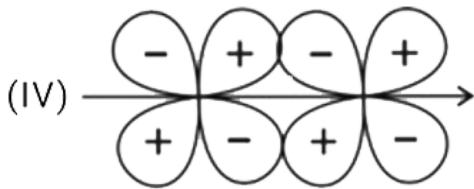
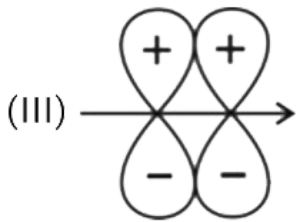
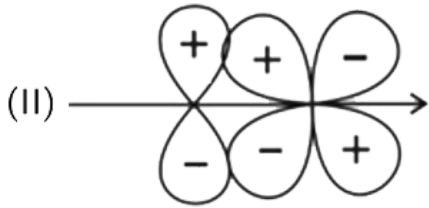
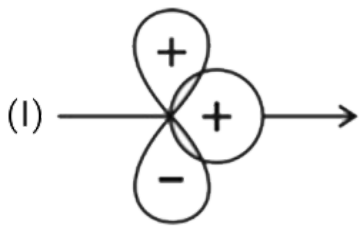
## CHEMISTRY

### BOOKS - NTA MOCK TESTS

### JEE MOCK TEST 26

#### Chemistry

1. Which of the following is a positive overlap that leads bonding ?



A. I and II

B. II and III

C. III and IV

D. I and IV

**Answer: B**

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2. Which among the following compounds does not act as reducing agent ?

A.  $H_2O$

B.  $H_2S$

C.  $H_2Se$

D.  $H_2Te$

**Answer: A**

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3. The initial concentration of X and Y were 2 and 4 mole / L respectively . For the following equilibrium  $X + 2Y \rightleftharpoons Z$  which of the following relationship among equilibrium concentrations of x , y and z is not feasible ?

A.  $[X] < [Z]$

B.  $[X] < [Y]$

C.  $[X] > [Y]$

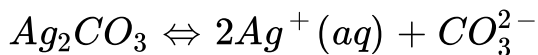
D.  $[Y] > [Z]$

**Answer: C**



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4. Using the Gibbs energy change,  $\Delta G^\circ = +63.3\text{kJ}$ , for the following reaction,



the  $K_{sp}$  of  $\text{Ag}_2\text{CO}_3(\text{s})$  in water at  $25^\circ\text{C}$  is

$$(R = 8.314\text{JK}^{-1}\text{mol}^{-1})$$

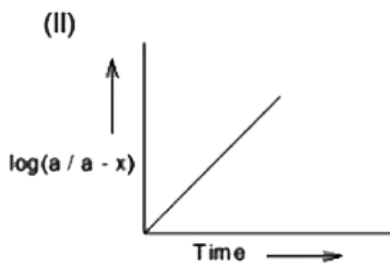
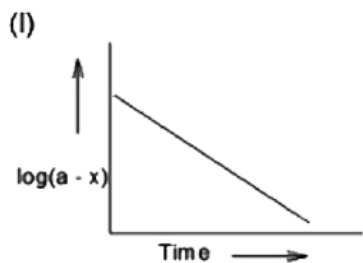
- A.  $7.9 \times 10^{-2}$
- B.  $8.0 \times 10^{-12}$
- C.  $2.9 \times 10^{-3}$
- D.  $3.2 \times 10^{-26}$

**Answer: B**



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5. Which set represent 1st order reactions out of (I) , (II) and (III)



A. I, II and III

B. I and II

C. II and III

D. I and III

**Answer: B**



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6. Which one is the wrong statement ?

A. Anhydrous  $AlCl_3$  exists as  $Al_2Cl_6$  (dimer)

B.  $Al_2Cl_6$  contains  $3c - 4e^-$  bonds

C. Anhydrous  $AlCl_3$  fumes in moist air

D. Anhydrous  $AlCl_3$  is ionic

**Answer: D**



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7. When  $MnO_2$  is fused with  $KOH$ , a coloured compound is formed. The product and its colour is

A.  $K_2MnO_4$ , green

B.  $KMnO_4$  , purple

C.  $Mn_2O_3$  brown

D.  $MnO_2$ , black

**Answer: A**



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**8.** A metal is illuminated by light of two different wavelength  $248nm$  and  $310nm$  . The maximum speeds of the photoelectrons corresponding in these wavelength are  $u_1$  and  $u_2$  respectively . If the ratio  $u_1 : u_2 = 2 : 1$  and  $hc = 1240eVnm$ , the work function of the metal is nearly

A. 3.7 eV

B. 3.2 eV



C. 2.8 eV

D. 2.5 eV

**Answer: A**

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9. The number and type of bonds between two carbon atoms in  $CaC_2$  are:

A. one sigma and one pi bonds

B. one sigma and two pi bonds

C. one sigma and half pi bond

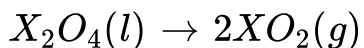
D. one sigma bond

**Answer: B**



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10. For the reaction:



$$\Delta U = 2.1 \text{ cal}, \Delta S = 20 \text{ calK}^{-1} \text{ at } 300 \text{ K}$$

Hence  $\Delta G$  is

- A. 9.3 kcal
- B. 2.7 kcal
- C.  $-2.7$  kcal
- D.  $-9.3$  kcal

Answer: C



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11. A balloon filled with oxygen is placed in a tank full of hydrogen gas at the same pressure is pricked with a sharp pointed needle. The volume of balloon just after the pricking would be

- A. Shrunk
- B. Enlarge
- C. Completely collapsed
- D. remains unchanged in size

**Answer: B**



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12. In the Hall-Heroult process for the extraction of  $Al$ , which of the following statements is false ?

A.  $CO$  and  $CO_2$  are produced in this process

B.  $Al_2O_3$  is mixed with  $CaF_2$  which lowers the melting point of the mixture and brings conductivity

C.  $Al^{3+}$  is reduced at the cathode to form  $Al$

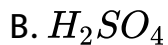
D.  $Na_3AlF_6$  helps in increasing the melting point of the mixture

**Answer: D**



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13. Which of the following acts as an oxidising as well as reducing agent ?

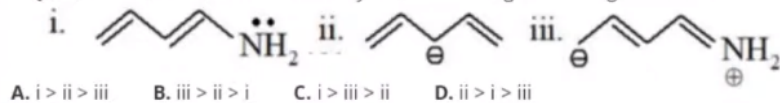


**Answer: D**

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14. Determine the order of stability of the following resonating structure.

Q.14 Determine the order of stability of the following resonating structure.



A.  $i > ii > iii$

B.  $iii > ii > i$

C.  $i > iii > ii$

D.  $ii > i > iii$

Answer: A

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15. The ionization energies of Li and Na are  $520 \text{ kJ mol}^{-1}$  and  $495 \text{ kJ mol}^{-1}$  respectively. The energy required to convert all the atoms present in 7 mg of Li

vapours and 23 mg of sodium vapours to their respective gaseous captions respectively are :

A. 52 J , 49.5 J

B. 520 J , 495 J

C. 49.5 J , 52 J

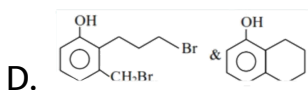
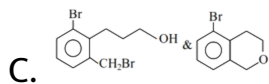
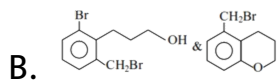
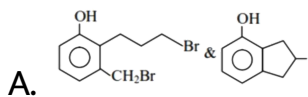
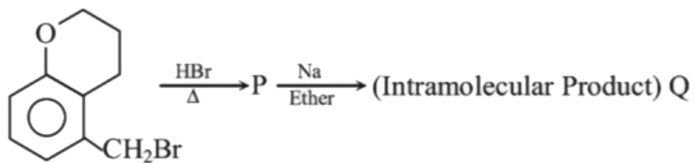
D. 495 J , 52 J

**Answer: B**



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**16.** In the following reaction sequence, structures of P and Q , are respectively



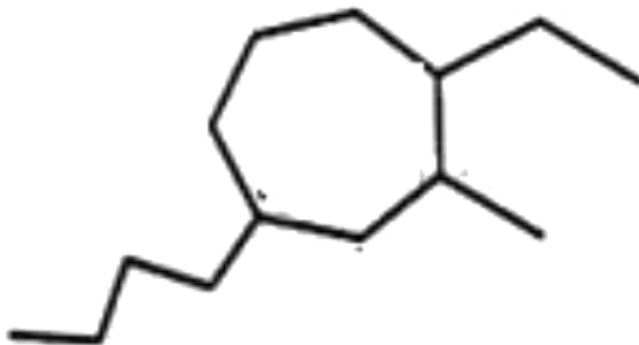
**Answer: D**



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17. Provide the systematic name of the compound shown



- A. 4 - Butyl - 2 ethyl - 1 methylcycloptane
- B. 1 - Butyl - 4 ethyl - 3 methylcycloptane
- C. 2 - Butyl - 4 ethyl - 1 methylcycloptane
- D. 4 - Butyl - 1 ethyl - 2 methylcycloptane

**Answer: D**

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18. Which reagent can be used to convert a carboxylic acid chloride into a ketone ?

- A. Chromic acid
- B. PCP
- C. Diborane , hydrogen peroxide
- D. An organolithium compound

**Answer: D**

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19. Which of the following can not be made by reduction of ketone or aldehyde with  $NaBH_4$  ?

A. 1 - Butanol

B. 2 - Butanol

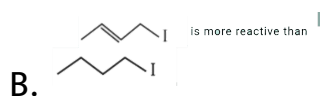
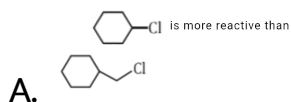
C. 2 - Methyl - 1 - propanol

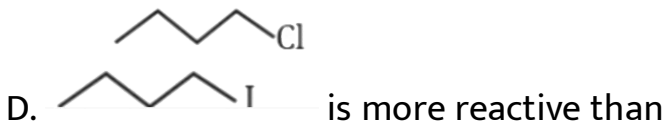
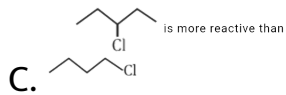
D. 2 - Methyl - 2 - propanol

**Answer: D**

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20. which of the following statement is correct for the reactivity in  $S_N2$  reaction ?





**Answer: B**

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21. pH of the anodic solution of the following cell is  $Pt, H_2(1atm) | H^+(xM) || H^+(1M) | H_2(1atm), Pt$  if  $E_{cell} = 0.2364V$ .

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22. The vapour pressure of pure water at  $26^{\circ}C$  is 25.5 torr. .  
The vapour pressure of a solution which contains 20.0  
glucose, ( $C_6H_{12}O_6$ ) , in 100 g water (in torr) is ?

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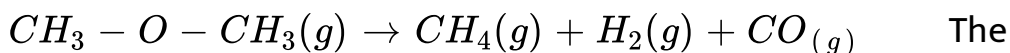
23. The number of geometric isomers of the complex  
 $Cr(NH_3)_3Cl_3$  are

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24. A hydrocarbon ( $A$ ) $C_nH_{2n-4}$  on ozonolysis gives  
 $(CH_3)_2CHCH_2CHO$ ,  $2OHCCH_2CH_2CHO$  and  $CH_3COCH_3$   
The value of n is

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25. The gas phase decomposition of dimethylether follows first order kinetics



reaction is carried out in constant volume container at  $500^\circ C$

and has a half - life of 14.5 . Initially only dimethylether is

present at a pressure of 0.40 atm . The total pressure of the

system after 12 min is  $\frac{x}{100}$  atm . The value of x is [Given

$$10^{0.25} = 1.778]$$



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