



## CHEMISTRY

### NTA MOCK TESTS ENGLISH

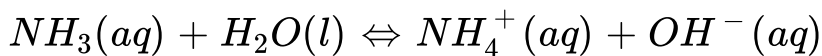
### NTA JEE MOCK TEST 59

#### Chemistry

1. What is the value of  $\Delta G(kJ/mol)$  at 298 K at some non-equilibrium condition?

Given the concentrations of  $[NH_3]$  is 0.05 M and  $[NH_4^+] = [OH^-] = 0.002M$  in the presence of excess water. Also

$$\Delta G_{\text{Reaction}}^{\circ} = + 26.81 \text{ KJ mol.}$$



A. + 3.437

B. - 9.433

C. + 50.18

D. - 50.18

**Answer: A**



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**2. Which of the following is a bactericidal antibiotic ?**

A. Ofloxacin

B. Tetracycline

C. Chloramphenicol

D. Erythromycin

**Answer: A**



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3. The standard electrode potentials  $\left(E_{M^+/M}^\circ\right)$  of four metals A, B, C and D are  $-1.2V$ ,  $0.6V$ ,  $0.85V$  and  $-0.76V$ , respectively. The sequence of deposition of metals on applying potential is

A.  $B > D > C > A$

B.  $A > C > B > D$

c.  $C > B > D > A$

d.  $D > A > B > C$

**Answer: C**



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4. Plot of  $\log(x/m)$  against  $\log P$  is a straight line inclined at an angle of  $45^\circ$ . When the pressure is 0.5 atm and Freundlich parameter ,K is 10, the amount of solute adsorbed per gram of adsorbent will be : ( $\log 5=0.6990$  )

A. 1 g

B. 2 g

C. 3 g

D. 5 g

**Answer: D**



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5. Mixture of two liquids A and B is placed in cylinder containing piston. Piston is pulled out isothermally so that volume of liquid decreases but that of vapour increases. When negligibly small amount of liquid was remaining the mole fraction of A in vapour is 0.4. Given  $P_A^\circ = 0.4 \text{ atm}$  and  $P_B^\circ = 1.2 \text{ atm}$  at the experimental temperature. Calculate the total pressure at which the liquid has almost evaporated. (Assume ideal behaviour)

A. 0.22 atm

B. 0.431 atm

C. 0.667 atm

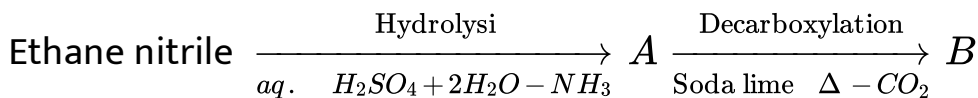
D. 1 atm

**Answer: C**



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**6. Identify A and B in the reaction given below**



A. Ethanoic acid, Methane

B. Ethanoic acid, Ethane

C. Acetone, Methane

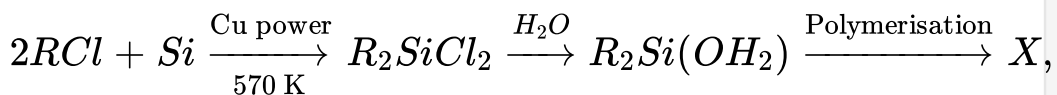
D. Acetic acid, Methanol

**Answer: A**



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**7.**



Then X will be

- A. Linear long chain silicone
- B. Cyclic silicone
- C. Cross linked silicone
- D. none of these

**Answer: A**



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8. Drained sewage has biological oxygen demand (*BOD*):

- A. More than water
- B. Less than water
- C. Equal than water
- D. None of the above

**Answer: A**



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9. Copper Matte is extracted from copper pyrites ore by heating it in blast furnace. The method is based on the



principle that:

A. Iron has more affinity for oxygen than copper at high temperature.

B. Sulphur has less affinity for oxygen at high temperature.

C. Sulphur has more affinity for oxygen at high temperature.

D. Copper has less affinity for oxygen than sulphur at high temperature.

**Answer: B**



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10. For a certain reaction the variation of rate constant with temperature is given by the equation

$$\ln k_t = \ln k_0 + \frac{(\ln 3)t}{10} \quad (t \geq 0^\circ C)$$

The value of temperature coefficient of the reaction is

A. 0.1

B. 1

C. 10

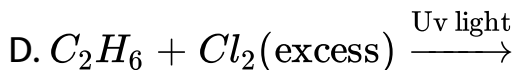
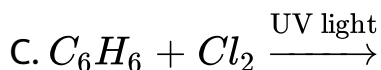
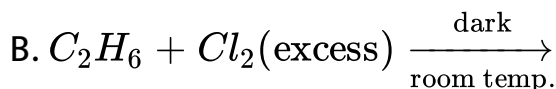
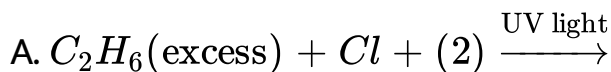
D. 3

**Answer: D**



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11. The reaction conditions leading to the best yield of  $C_2H_5Cl$  are

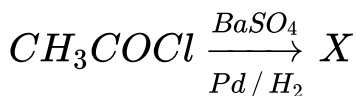


**Answer: A**



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12. In the following reaction,



Identify X out of the following

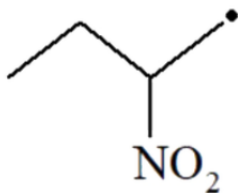
- A. Acetaldehyde
- B. Propionaldehyde
- C. Acetone
- D. Acetic anhydride

**Answer: A**



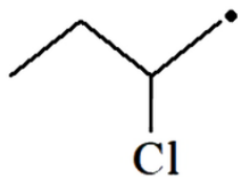
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13. The most stable radical among the following is

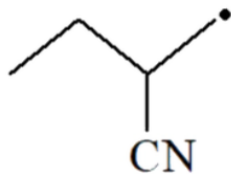


A. \_\_\_\_\_

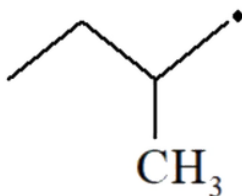
B.



C.



D.

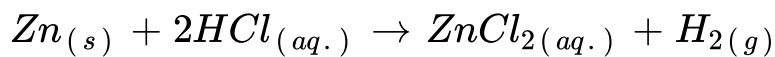


**Answer: D**



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**14.** Zinc and hydrochloric acid react according to the reaction:



If 0.30 mole of  $Zn$  are added to hydrochloric acid containing 0.52 mole  $HCl$ , how many moles of  $H_2$  are produced?

- A. 0.2
- B. 0.62
- C. 0.6
- D. 0.26

**Answer: D**



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**15.** The solubility product values of barium sulphate and barium carbonate are  $1.0 \times 10^{-10}$  and  $5.0 \times 10^{-9}$

respectively when the two salts are simultaneously equilibrated in pure water the ratio of  $\frac{[SO_4^{2-}]}{[CO_3^{2-}]}$  is

A. 0.02

B. 0.10

C. 0.05

D. 0.12

**Answer: A**



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16.  ${}_{84}Po^{210}$  decays with a particle to  ${}_{82}Pb^{206}$  with a half life of 138.4 days. If 1.0 g of  ${}_{84}Po^{210}$  is placed in a sealed tube,

how much helium will accumulate in 69.2 days. Express the answer in  $\text{cm}^3$  at STP

A.  $28.21\text{cm}^3$

B.  $31.25\text{cm}^3$

C.  $36.85\text{cm}^3$

D.  $38.47\text{cm}^3$

**Answer: B**



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17. The geometry of  $\text{ClO}_3^-$  ion according to valence shell electron pair repulsion (VSEPR) theory will be :

A. Planar triangular



B. Trigonal Pyramidal

C. Tetrahedral

D. Square planar

**Answer: B**



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**18.** Given the molecular formula of the hexacoordinated complexes (A)  $[CoCl_3.6NH_3]$  (B)  $[CoCl_3.5NH_3]$  (C)  $CoCl_3.4NH_3$ . If the number of coordinated  $NH_3$  molecules in A, B and C respectively are 6, 5 and 4, the primary valency in (A), (B) and (C) are:

A. 3, 3, 3

B. 0, 1, 2

C. 3, 2, 1

D. 6, 5, 4

**Answer: A**

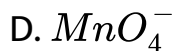


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**19.** Hydrogen peroxide acts both as an oxidising and as a reducing agent depending upon the nature of the reacting species. In which of the following cases  $H_2O_2$  acts as a reducing agent in acid medium ?

A.  $KI$

B.  $Cr_2O_7^{2-}$

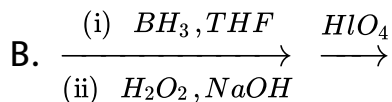
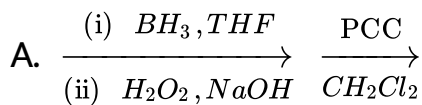


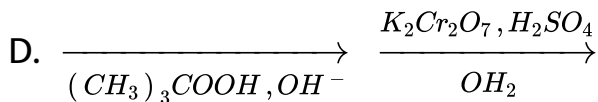
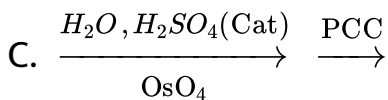
**Answer: D**



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**20.** Which one of the following work best to carry out the reaction?





**Answer: A**



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**21.** Total number of chain isomers possible for  $C_7H_{16}$  are



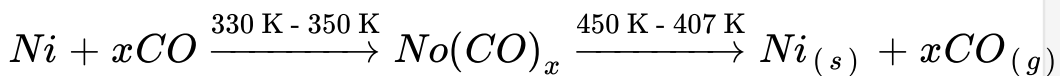
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**22.** Calculate the amount of calcium oxide required when it reacts with 852g of  $P_4O_{10}$ .



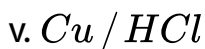
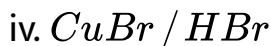
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23. In Mond's process for refining of nickel, the following reactions occur. The value of 'x' is -----.



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24. How many of the following reagents react with arene diazonium salts to form aryl halides?



vii.  $CH_3CH_2OH$

viii.  $H_3PO_2 / H_2O$



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