CHEMISTRY

BOOKS - NTA MOCK TESTS

NEET MOCK TEST 16

Chemistry

1. In hydrogen atom, an electron in its ground state absorbs two times of the energy as if requires escaping (13.6 eV) from the atom. The wavelength of the emitted electron will be

A. $1.34 \times 10^{-10} m$

B. $2.34 \times 10^{-10} m$

C. $3.34 \times 10^{-10} m$

D. $4.44 \times 10^{-10} m$

Answer: C

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2. The molal lowering of vapor pressure for H_2O at $100^\circ C$ is

A. 760 mm

B. 750 mm

C. 13.43 mm

D. 0.760 mm

Answer: C

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3. The molar ratio 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. can't be determined

Answer: B

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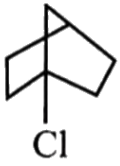
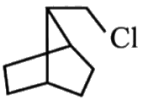
4. Which of the following is not true for S_{N1} reaction ?

A. Ethyl chloride

B. Isopropyl chloride

C. 

D. 

Answer: C

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5. One of the processes used for concentration of ores is Froth floatation process. This process is generally used for concentration of sulphide ores. Sometimes in this process we add NaCN as a depressant. NaCN is generally added in case of ZnS and PbS minerals. what is the purpose of addition of NaCN during the process of Froth floatation?

A. NaCN causes reduction by precipitation

B. A soluble complex is formed by reactio between NaCN and ZnS while PbS forms froth

C. A soluble complex is formed by reaction between NaCN and PbS while ZnS forms froth

D. A precipitate of $Pb(CN)_2$ is produced while ZnS remain unaffected.

Answer: B

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6. Which of the following drugs is an analgesic?

A. Sulpha guanidine

B. Paludrin

C. Analgin

D. All of these

Answer: C

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7. The volume percentage of Cl_2 at equilibrium in the dissociation of PCl_5 under a total pressure of 1.5atm is (Kp = 0.202) ,

A. 74.5

B. 36.5

C. 63.5

D. 26.6

Answer: D

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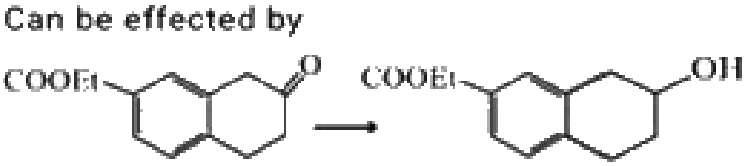
8. The conversion : can be effected by



A. $LiAlH_4$ reduction

B. Clemmensen's reduction

C. $NaBH_4$ reduction

D. H_2 / Ni reduction

Answer: C

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9. An organic compound (A) contatns 20% C, 46.66% N and 6.66% H. It gave NH3 gas on heating with NaOH. The organic compound (A) could be

A. CH_3CONH_2

B. $C_6H_5CONH_2$

C. NH_2CONH_2

D. $CH_3NHCONH_2$

Answer: C

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10. If the temperature of an ideal gas in a sealed, rigid container is increased to 1.5 times the initial value (in K), the density of gas

A. becomes 1.5 times the initial value

B. becomes 2.5 times the initial value

C. becomes 2.25 times the initial value

D. remains same

Answer: D

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11. The optical rotation of the α-form of a pyranose is $+150.7^{\circ}$, that of the β-form is $+52.8^{\circ}$. In solution an equilibrium mixture of these anomers has an optical rotation of $+80.2^{\circ}$. The precentage of the α-form in equilibrium mixture is :

A. 0.28

B. 0.32

C. 0.68

D. 0.72

Answer: A

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12. Orthoboric acid when heated to red hot gives :

A. metaboric acid

B. pyroboric acid

C. boron and water

D. diboron trioxide

Answer: D

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13. ΔH_t° for $CO_2(g)$ and $H_2O(g)$ are $-393.5, -110.5$ and $-241.8 kJ \text{mol}^{-1}$ respectively. The standard enthalpy change (in kJ) for the reaction.

$CO_2(g) + H_2(g) \rightarrow CO(g) + H_2O(g)$ is:

A. 524.1

B. 41.2

C. -262.5

D. -41.2

Answer: B

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14. Which of the following is not an actinoid?

A. Curium (Z=96)

B. Californium (Z=98)

C. Uranium (Z=92)

D. Terbium (Z=65)

Answer: D

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15. A chloride dissolves appreciably in cold water. When placed on platinum wire in Bunsen flame, no distinctive colour is noticed, the cation would be

A. Mg^{2+}

B. Ba^{2+}

C. Ag^{+}

D. Ca^{2+}

Answer: A

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16. In the chemical reaction ,

$CH_3CH_2NH_2 + CHCl_3 + 3KOH \rightarrow (A) + (B) + 3H_2O$

The compounds (A) and (B) are respectively:

A. C_2H_5NC and K_2CO_3

B. $CH_3CH_2CONH_2$ and $3KCl$

C. C_2H_5CN and 3KCl

D. C_2H_5CN and 3KCl

Answer: D

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17. Sodium thiosulphate, $Na_2S_2O_3.5H_2O$ is used in photography to

A. reduce the silver bromide grains to metallic silver

B. convert the metallic silver to silver salt

C. remove undecomposed Ag Br as soluble silver thiosulphate complex

D. remove reduced silver

Answer: C

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18. Some type of gels like gelatin loose water slowly. The process is known as :

A. Synerisis

B. thixotropy

C. peptisation

D. limbition

Answer: A

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19. The change in entropy when the pressure of perfect gas is changed isothermally from P_1 to P_2 is

A. $\triangle S = nR\ln(P_1 + P_2)$

B. $\triangle S = nR\ln(P_2/P_1)$

C. $\triangle S = nR\ln(P_1/P_2)$

D. $\triangle S = nR\ln\left(\frac{P_1 + P_2}{P_2}\right)$

Answer: C

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20. Electrode potential data given below

$Cl_2 + 2H_2O \rightarrow 2ClO^- + 4H^+ + 2e^-, E^\circ = -1.61$ volt

$ClO^- + 2H_2O \rightarrow ClO_3^- + 4H^+ + 4e^-, E^\circ = -0.50$ volt Based on these data which is the spontaneous reaction .

A. $Cl_2 + ClO^- \rightarrow ClO_3^-$

B. $Clo^- \rightarrow Cl_2 + ClO_3^-$

C. $ClO_3^- \rightarrow Cl_2 + ClO^-$

D. $ClO^- + Cl_2 \rightarrow ClO_3^-$

Answer: B

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21. Consider the fallowing statement :

(I) $CH_3OC^{\oplus}H_2$ is more stable that $CH_3CH_2^{\oplus}$

(II) $Me_3C^{\oplus}$ is more stable than $CH_3CH_2C^{\oplus}H_2$

(III) $CH_2 = CH - C^{\oplus}H_2$ is more stable than $CH_3CH_2C^{\oplus}H_2$

(IV) $CH_2 = C^{\oplus}H$ is more stable thn $CH_3C^{\oplus}H_2$ of these statement:

A. I and II are correct

B. III and IV are correct

C. I,II and III are correct

D. All are correct

Answer: C

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22. Specific conductance of 0.1 MHA is $3.75 \times 10^{-4} ohm^{-1} cm^{-1}$. If λ^{∞} of HA is $250 ohm^{-1} cm^2 mol^{-1}$, then dissociation constant K_a of HA is

A. 1×10^{-5}

B. 2.25×10^{-4}

C. 2.25×10^{-13}

D. 2.25×10^{-13}

Answer: C

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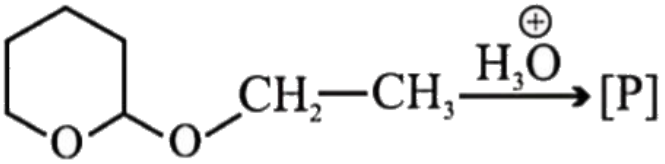
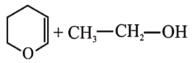
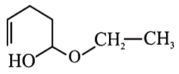
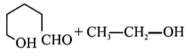
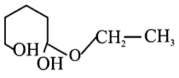
23. The major product [P] formed in the following reaction is



A. 

B. 

C. 

D. 

Answer: C

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24. A 0.001 molal aqueous solution of a complex $[MA_8]$ has the freezing point of $-0.0054^{\circ}C$. If the primary valency of the salt undergoes $100\,\%$ ionization and K_f for water $= 1.8$ K molality^{-1} the correct representation of complex is

A. $[MA_8]$

B. $[MA_6]A_2$

C. $[MA_4]A_4$

D. $[MA_5]A_3$

Answer: B

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25. Copper pyrites are concentrated by

A. electromagnetic method

B. gravity method

C. froth floatation process

D. all the above

Answer: C

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26. Which of the following esters cannot undergo Claisen self-condensation

A. $CH_3CH_2CH_2CH_2COOC_2H_5$

B. $C_6H_5COOC_2H_5$

C. $C_6H_{11}CH_2COOC_2H_5$

D. $C_6H_5CH_2COOC_2H_5$

Answer: B

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27. Which of the following oxides of Nitrogen is Neutral

A. N_2O_5

B. N_2O_3

C. N_2O_4

D. N_2O

Answer: D

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28. The strength of $10^{-2}Mna_2CO_3$ solution in terms of molality will be (density of the solution =$1.10gml^{-1}$)

$(M.\ wtNa_2CO_3 = 106)$

A. 9×10^{-3}

B. 1.15×10^{-2}

C. 5.1×10^{-3}

D. 11.2×10^{-3}

Answer: A

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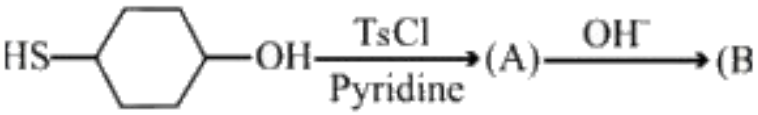
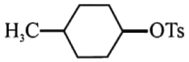
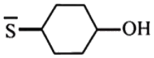
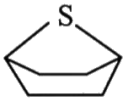
29. In the given reaction, what is [B]?



A. 

B. 

C. 

D. 

Answer: C

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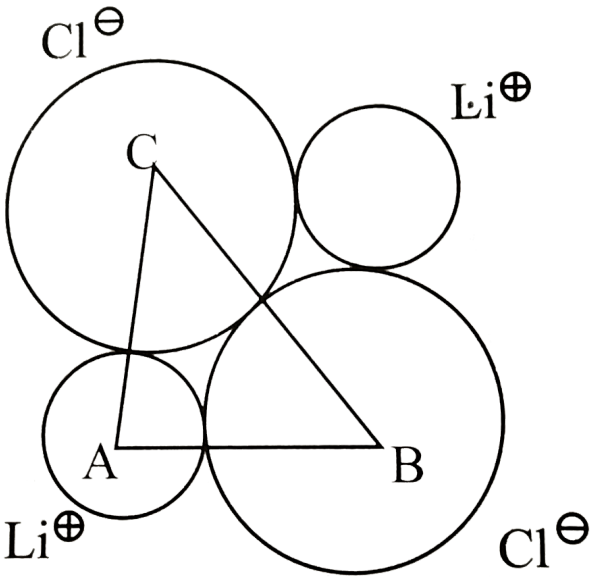
30. The unit cube length for $LiCl$ ($NaCl$ structure) is 5.14Å. Assuming anion-anion contact, calculate the ionic radius for chloride ion.



A. 1.815

B. 3.63

C. 2.75

D. 5.14

Answer: A

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31. Non-polar molecule among the following is

A. SF_4

B. $BF_3 . NH_3$

C. PF_3Cl_2

D. XeF_4

Answer: D

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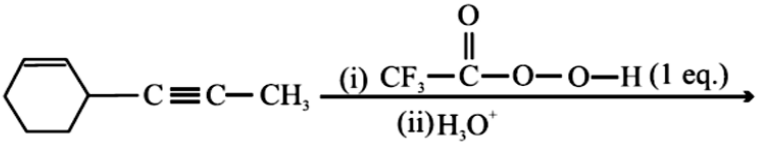
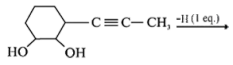
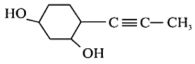
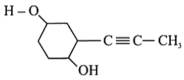
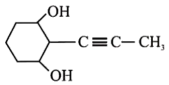
32. 

Identify the product

A. 

B. 

C. 

D. 

Answer: A

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33. Which of the following chemical equation represents the formation of colloidal solution

A. $Cu + CuCl_2 \rightarrow Cu_2Cl_2$

B. $2Mg + CO_2 \rightarrow 2MgO + C$

C. $2HNO_3 + 3H_2S \rightarrow 3S + 4H_2O + 2NO$

D. Both (B) and (C)

Answer: C

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34. Bond angle in PH_3 si closer to 90° while that in NH_3 is 104.5°. Which of the following best explains this

structural feature?

A. Due to larger size of the lone pair electron cloud, there is larger lone pair - bond pair repulsion in PH_3 compared to NH_3

B. Higher electronegativity of nitrogen concentrates the bond pair electron cloud near the central atom which increases the bond pair - bond pair repulsion which in turn decreases the bond angle in NH_3

C. Energy difference between 3s an,d 3p orbitals is quite high and hence the lone pair on phosphorous prefers to occupy unhybridized s-

orbital rather than hybridized sp^3 hydridized orbital which causes its s-orbital energy to increase.

D. Phosphorous forms $p\pi - d\pi$ bonds while nitrogen does not.

Answer: C

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35. In a reaction carried out at 400K, 0.01% of the total number of collisions is effective. The energy of activation of the reaction is

A. 13.3 kJ/mol

B. 23.5kJ/mol

C. 3.2kJ/mol

D. 30.6kJ/mol

Answer: D

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36. For a certain atom, there are energy levels A, B, C corresponds to energy values $E_A < E_B < E_C$

Choose the correct option if $\lambda_1, \lambda_2, \lambda_3$ are the wave length of radiations corresponding to the transition from C to B, B to A and C to A respectively. .

A. $\lambda_3 = \lambda_1 + \lambda_2$

B. $\lambda_3 = \dfrac{\lambda_1 \lambda_2}{\lambda_1 + \lambda_2}$

C. $\lambda_1 + \lambda_2 + \lambda_3 = 0$

D. $3\lambda_3 = \lambda_3 + 2\lambda_2$

Answer: B

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37. A crystal is made up of particles X, Y, and Z. X forms f packing. Y occupies all octahedral voids of X and Z occupies all tetrahedral voids of X. If all the particles along one body diagonal are removed. Then the formula of the crystal would be

A. XYZ_2

B. X_2YZ_2

C. $X_8Y_4Z_5$

D. $X_5Y_4Z_8$

Answer: D

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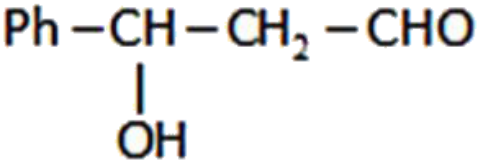
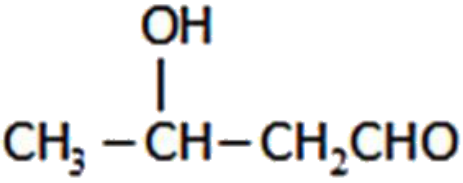
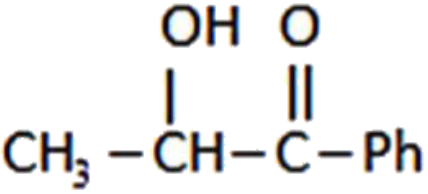
38. Identify the option which represents the correct products of the following reaction,

$PhCHO + CH_3CHO \xrightarrow{OH^-}$ (Aldols)

(I) 

(II) $PhCH_2 - COPh$

(III) 

(IV) 

A. I,II

B. I,III

C. II,III

D. I,III,IV

Answer: B

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39. By which of the following method, H_2O_2 cannot be synthesised?

A. Addition of H_2SO_4 on BaO_2

B. Addition of H_2SO_4 on PbO_2

C. Aerial oxidation of 2-ethyl anthraquinol

D. Electrolysis of $(NH_4)_2SO_4$ at a high current density.

Answer: B

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40. One mole of a non-ideal gas undergoes a change of state (2.0atm, 3.01L, 95K) $\rightarrow$ (4atm,5L,245K) with a change in interanl energy, $\triangle U = 30.0Latm.$ The change in enthalpy, $\triangle H$, of the process in L atm is

A. 40

B. 42.3

C. 44

D. 1

Answer: C

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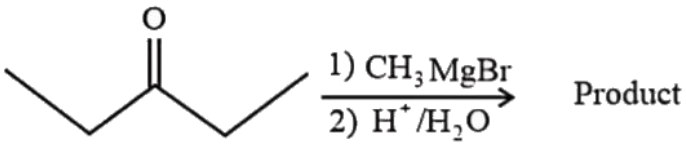
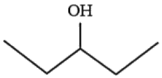
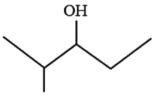
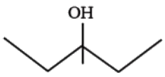
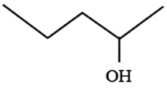
41. 

Product is

A. 

B. 

C. 

D. 

Answer: B

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42. Which of the following metal is expected to have the highest third ionisation enthalpy?

A. Cr(Z=24)

B. V(Z=23)

C. Mn(Z=25)

D. Fe(Z=26)

Answer: C

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43. The anomeric carbon in D(+) glucose is

A. C-1 carbon

B. C-2 carbon

C. C-5 carbon

D. C-6 carbon

Answer: A

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44. Correct sequence for reactivity of acid derivative is

(1) $(RCO)_2O$

(2) RCOCl

(3) RCOOR

(4) RCONH_2

A. 2gt1gt3gt4

B. 1gt2gt3gt4

C. 2gt1gt4gt3

D. 1gt3gt2gt4

Answer: A

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45. pH of a $10^{-10}MNaOH$ is nearest to

A. 10

B. 7

C. 4

D. 10.9

Answer: B