CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 106

Chemistry

1. The K_{sp} for X_2SO_4 at 25° (X^+ is a monovalent ion) is 3.2×10^{-5} The maximum concentration of X^+ that could be attained in a saturated solution of this solid at $25^\circ C$ is

A. 4×10^{-2}M

B. 2.89×10^{-4}M

C. $3 \times 10^{-3} M$

D. 6×10^{-3} M

Answer: A

Watch Video Solution

2. In which of the following species, d-obitals having xz an yz two nodal planes involved in hybridization of central atoms?

A. $IO_2F_2^-$

B. CIF_4^-

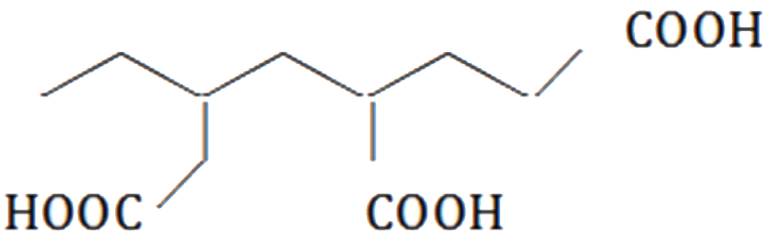
C. IF_7

D. All of these

Answer: C

Watch Video Solution

3. IUPAC name of the compond is



A. 6-ethyl-1,4,8-octanetrioc acid

B. 5-ethy-1,3,6-hexanetricarboylic acid

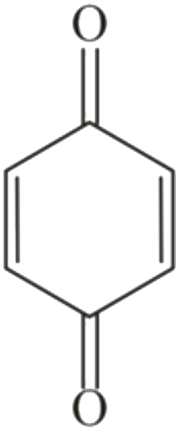
C. 3-ethyl-5-carboxyl octanedioic acid

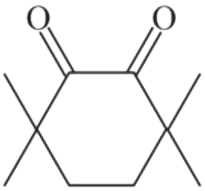
D. 4-carboxy-6-ethyloctanedioic acid

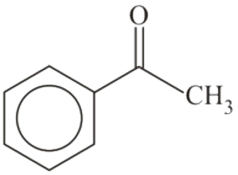
Answer: B

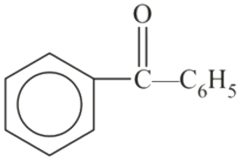
Watch Video Solution

4. Which of the following compound will undergo tatomerism?

A. 

B. 

C. 

D. 

Answer: C

Watch Video Solution

5. Which does not undergo comproportionation reaction?

A. $H_2S + SO_2 \rightarrow$

B. $I^-(aq) + IO_3^-(aq) + H^+(aq) \rightarrow$

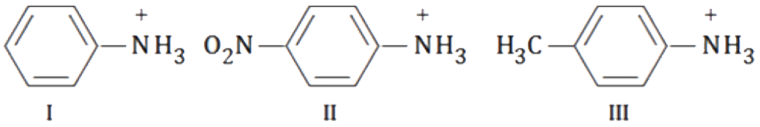
C. $K_2MnO_4 + H^+(aq) \rightarrow$

D. $MnO_4^{-} + Mn^{2+}(aq) \rightarrow$

Answer: C

Watch Video Solution

6. Rank the three compounds in order of decreasing acidity



I II III

A. I, II, III

B. III, II, I

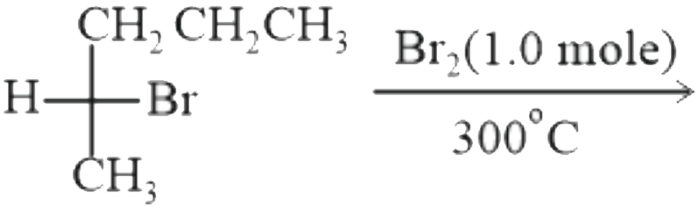
C. II, I, III

D. II, III, I

Answer: C

Watch Video Solution

7. For the following compound during monobromination reaction, the number of possible chiral products are



A. 3

B. 4

C. 5

D. 6

Answer: C

Watch Video Solution

8. 500 ml of a hydrocarbon gas burnt in excess of oxygen yields 2500 ml of CO_2 and 3 litres of water vapours. All volume being

measured at the same temperature and pressure. The formula of the hydrocarbon is :

A. C_4H_{10}

B. C_5H_{12}

C. C_2H_2

D. C_5H_{10}

Answer: B

Watch Video Solution

9. Lead dissolves most readily in

A. Acetic acid

B. Hydrochloric acid

C. Sulphuric acid

D. Nitric acid

Answer: D

Watch Video Solution

10. The ratio of closed packed atoms to tetrahedral holes in cubic close packing is :

A. $1:1$

B. $1:3$

C. $1:2$

D. $2:1$

Answer: C

Watch Video Solution

11. The main oxides formed on combustion of Li,Na and K in excess of air respectively are

A. Li_2O_2, Na_2O_2 and RbO_2

B. Li_2O, Na_2O and RbO_2

C. LiO_2, Na_2O_2 and Rb_2O

D. Li_2O, Na_2O_2 and RbO_2

Answer: D

Watch Video Solution

12. The given reaction

$$CH_3 - CH_2 - CH_3 \xrightarrow{Br_2 / hv} CH_3 - \overset{\overset{Br}{|}}{CH} - CH_3 + HBr$$

is an example of

A. Nucleophilic substitution

B. Free radical substitution

C. Electrophilic substitution

D. Addition

Answer: B

Watch Video Solution

13. The main products formed by the reaction of N_2O_5 and H_2O_2 are

A. only HNO_3

B. $HNO_3 + O_3$

C. $HNO_3 + HNO_4$

D. $HNO_3 + HNO_2$

Answer: C

Watch Video Solution

14. For the chemical reaction $3X(g) + Y(g) \rightarrow X_3Y(g)$,the amount of X_3Y at equilibrium is affected by:

A. temperature and pressure

B. temperature only

C. pressure only

D. temperature, pressure and catalyst

Answer: A

Watch Video Solution

15. The wavelength of K_α line for an element of atomic number $43 is \lambda$. Then the wavelength of K_α line for an element of atomic number 29 is

A. $\frac{43}{29}\lambda$

B. $\frac{42}{28}\lambda$

C. $\frac{9}{4}\lambda$

D. $\frac{4}{9}\lambda$

Answer: D

Watch Video Solution

16. Phenol is least reactive for aromatic nucleophilic substitution because

A. Carbon-oxygen bond has some double bond character due to resonance

B. Oxygen is present on sp^2-hybrid carbon which makes carbon-oxygen bond stronger

C. Oxygen is highly electronegative which decreases bond length between carbon and oxygen

D. All are correct

Answer: D

Watch Video Solution

17. Which of the following is true about the complex $[PtCl_2(H_2O)(NH_3)]$?

A. It exhibits geometrical isomerism

B. It is paramagnetic complex

C. Its geometry is tetrahedron

D. Platinum is sp^3 hybridised

Answer: A

Watch Video Solution

18. Which of the following pairs represents constitutional isomers?

A. 2-methylbutane and pentane

B. Propyl chloride and isopropyl chloride

C. 2-chlorohexane and 3 - chlorohexane

D. All of the above

Answer: D

Watch Video Solution

19. Find the entropy change for vaporisation of water to steam at $100^{\circ}C$ in $JK^{-1}mol^{-1}$ if heat of vaporisation is $40.8kJmol^{-1}$.

A. 109.38

B. 100.38

C. 110.38

D. 120.38

Answer: A

Watch Video Solution

20. An electrolytic cell contains a solution of Ag_2SO_4 and have platinum electrodes. A current is passed until 1.6gm of O_2 has been liberated at anode. The amount of silver deposited at cathode would be

A. 107.88 g

B. 0.8g

C. 1.6 g

D. 21.60 g

Answer: D

Watch Video Solution

21. In which of the following ionization processes , the bond order has increased and the magnetic behaviour has changed ?

A. $C_2^+ \rightarrow C_2$

B. $NO^+ \rightarrow NO$

C. $O_2 \rightarrow O_2^+$

D. $N_2 \rightarrow N_2^+$

Answer: A

Watch Video Solution

22. What volume of O_2 measured at standard condition will be formed by the action of $100mL$ of $0.5NKMnO_4$ on hydrogen peroxide in an acid solution?

The skeleton equation for the reaction is,

$$KMnO_4 + H_2SO_4 + H_2O_2 \rightarrow KHSO_4 + MnSO_4 + H_2O + O_2$$

A. 0.12 litre

B. 0.28 litre

C. 0.56 litre

D. 1.12 litre

Answer: B

Watch Video Solution

23. Sodium salt solution $+AgNO_3\text{soln.} \rightarrow$ Coloured precipitate.

If coloured precipitate is soluble in both dil. HNO_3 and excess conc. NH_3 solution then which of the following anion is present in the salt solution?

A. $S^{2-}(aq)$

B. $I^{-}(aq)$

C. $PO_4^{3-}(aq)$

D. $Br^{-}(aq)$

Answer: C

Watch Video Solution

24. How much amount of $NaCl$ should be added to 500 g of water $\rho = 1.00g/mL)$ to decrease the freezing point of water to $-0.3^{\circ}C$? (The freezing point depression constant for water $= 2Kkgmol^{-1})$

A. $2.19g$

B. $1.88g$

C. $1.96g$

D. $1.085g$

Answer: A

Watch Video Solution

25. In the reaction sequence Cyclohexane

$\xrightarrow{hv / Cl_2} (A) \xrightarrow{alk.KOH / \Delta} (B) \xrightarrow[(ii)\, Zn / H_2O]{(i)\, O_3}$. 'C' will be

A. Hexanal

B. 2-Hexanone

C. 3-Hexanone

D. Hexane-1,6-dial

Answer: D

Watch Video Solution

26. In the given reaction

$$CH_3 - \overset{\overset{Br}{|}}{CH} - CH_2 - COOH \xrightarrow{NaOH} (X).$$

'X' will be

A. $CH_3 - \underset{\underset{OH}{|}}{O}H(C)H - CH_2 - COOH$

B. $CH_3 - \underset{\underset{OH}{|}}{C}H - CH_2 - COOH$

C. $CH_3 - \underset{\underset{OH}{|}}{C}H - CH_2 - COONa$

D. $CH_3 - CH = CH - COOH$

Answer: C

Watch Video Solution

27. Warming ammonium chloride with sodium hydroxide in a test tube is an example of :

A. closed system

B. isolated system

C. open system

D. None of these

Answer: C

Watch Video Solution

28. Consider the following sequence of reaction and identify the final product (Z).

$$CH_3 - CH = CH_2 \xrightarrow{HBr} (P) \xrightarrow{aq.NaOH} (Q) \xrightarrow[K_2Cr_2O_7 / H^+]{\text{oxidation}} (R)$$

A. $CH_3CH_2CH_3$

B. CH_3CH_2CHO

C. CH_3CH_2COOH

D. CH_3COCH_3

Answer: D

Watch Video Solution

29. 19 g of molten $SnCl_2$ is electrolysed for sometime using inert electrodes. 0.119g of Sn is deposited at the cathode. No substance is lost during the electrolysis. The ratio of the weights of $SnCl_2$: $SnCl_4$ after electrolysis [Atomic weight of $Sn = 119$]

A. $71.34:1$

B. $31.34:1$

C. $7.134:1$

D. None of these

Answer: A

Watch Video Solution

30. An alkali is titrated against an acid with methyl orange as indicator, which of the following is a correct combination?

A. Base , Strong Acid , Strong End point , Pinkish red to yellow

B. Base : Weak Acid , Strong End point , Yellow to pinkish red

C. Base , Strong Acid , Strong End point ,Pink to colourless

D. Base , Weak Strong Acid , Colourless to pink

Answer: B

Watch Video Solution

31. What is the predominant intermolecular force of attraction between the adjacent chains of polymer molecules in natural

rubber?

A. H- bonds

B. dipole-dipole attraction

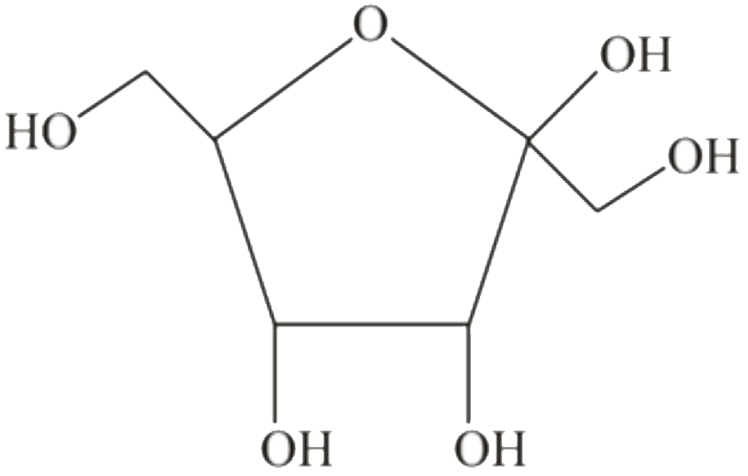
C. van der Waal's force

D. Ionic attraction

Answer: C

Watch Video Solution

32. Which description fit the following sugar best ?



A. Ketose, fructose, α

B. Ketose, fructose, β

C. Aldose, pyranose, β

D. Aldose, pyranose, α

Answer: B

Watch Video Solution

33. Adsorption is accompanied by

A. decrease in entropy of system

B. decrease in enthalpy

C. the value of ΔST is negative

D. all of these

Answer: D

Watch Video Solution

34. A hypothetical reaction $A_2 + B_2 \rightarrow 2AB$ follows the mechanism as given below:

$A_2 \Leftrightarrow A + A(\text{fast})$

$A + B_2 \rightarrow AB + B$ (slow)

$A + B \rightarrow AB$ (fast)

The order of the overall reaction is

A. 2

B. 1

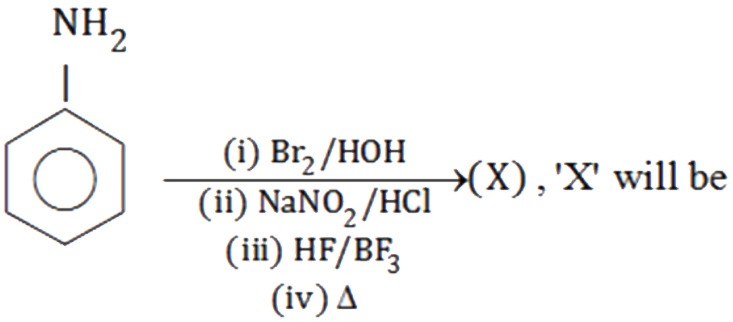
C. $3/2$

D. 0

Answer: C

Watch Video Solution

35. In the reaction



A. p-Bromofluorobenzene

B. 2,4,6-Tribromofluorobenzene

C. p-Bromoaniline

D. 1,3,5-Tribromobenzene

Answer: B

Watch Video Solution

36. The set having incorrect statement is

1. the Hall-Heroult process is used for the production of aluminum and iron

2. pig iron is obtained from cast iron.

3. the blistered appearance of copper during the metallurgical process is due to the evolution of CO_2

4. leaching of bauxite using concentrated NaOH solution gives sodium aluminate and sodium silicate

A. 1,2

B. 2,3

C. 1,2,3

D. 1,2,4

Answer: C

Watch Video Solution

37. An aqueous solution of titanium bromide shows zero magnetic moment. Assuming the complex as octahedral in aqueous solution, the formula of the complex is .

A. $\left[Ti(H_2O)_6\right]Cl_2$

B. $\left[Ti(H_2O)_6\right]Cl_4$

C. $\left[TiCl_2(H_2O)_3\right]$

D. $\left[TiCl_2(H_2O)_4\right]$

Answer: B

Watch Video Solution

38. In the given sequence of reaction, identify Y

$$C_6H_5 - \overset{\overset{O}{||}}{C} - CH_3 \xrightarrow{SeO_2} X \xrightarrow[(ii)\,H_2O/H^{\oplus}]{(i)\,Conc.NaOH/\,\Delta} Y$$

A. $C_6H_5 - CH_2OH$

B. $C_6H_5 - COOH$

C. $C_6H_5 - CHOH - COOH$

D. $C_6H_5 - CO - COOH$

Answer: C

Watch Video Solution

39. In the reactions,

$$S + \frac{3}{2}O_2 \rightarrow SO_3 + 2xkJ \text{ and } SO_2 + \frac{1}{2}O_2 \rightarrow SO_3 + \text{y kJ}$$

Heat of formation of $SO_2$is _____.

A. $(y - 2x)$

B. $(2x + y)$

C. $(x + y)$

D. $(2x / y)$

Answer: A

Watch Video Solution

40. Which of the following combination does not evolve Cl_2 gas?

A. $HCl(aq) + KMnO_4$

B. $HCl + MnO_2$

C. $HCl + I_2$

D. $HCl + F_2$

Answer: C

Watch Video Solution

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

A. L-sugar component

B. D-sugar component

C. chiral phosphate ester units

D. chiral bases

Answer: B

Watch Video Solution

42. TiO_2 is well known example of :

A. triclinic system

B. tetragonal system

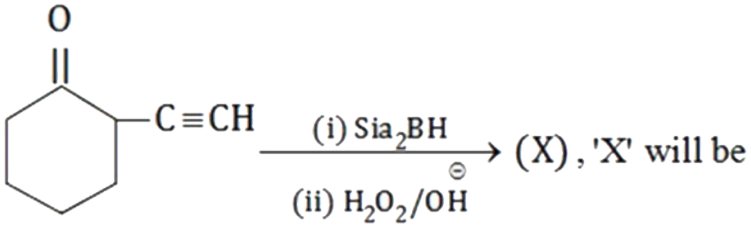
C. Monoclinic system

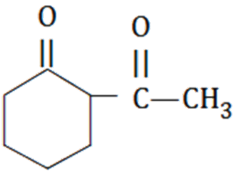
D. None of these

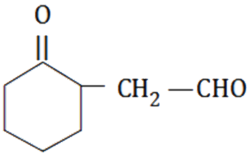
Answer: B

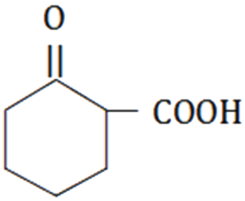
Watch Video Solution

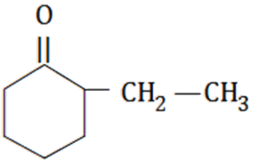
43. In the given reaction



A. 

B. 

C. 

D. 

Answer: B

Watch Video Solution

44. When $NaNO_3$ is heated in a closed vessel, oxygen is liberated and $NaNO_2$ is left behind. At equilibrium

A. addition of $NaNO_2$ favours forward reverse reaction

B. addition of $NaNO_2$ favours forwards reaction

C. increasing temperature favours forwards reaction

D. decreasing pressure favours reverse reaction

Answer: C

Watch Video Solution

45. Which of the following sequence is correct here?

A. $Tl < \ln < Ga < Al$ (stability of + 1 oxidation state)

B. $CO_2 < SiO_2 < SnO_2 < PbO_2$ (increasing oxidising power)

C. $BF_3 < BCl_3 < BBr_3 < Bl_3$ (the lewis acid strength)

D. Both B and C

Answer: D

Watch Video Solution