

CHEMISTRY

BOOKS - MHTCET PREVIOUS YEAR PAPERS AND PRACTICE PAPERS

MOCK TEST 1

Mcqs

1. For an ideal binary liquid solution with $p_A^\circ > p_B^\circ$, which is a relation between X_A

(mole fraction of A in liquid phase) and Y_A (mole fraction of A in vapour phase) is correct, X_B and Y_B are mole fractions of B in liquid and vapour phase respectively?

A. $X_A = Y_A$

B. $X_A > X_B$

C. $\frac{X_A}{X_B} < \frac{Y_A}{Y_B}$

D. X_A , Y_B , X_B and Y_B cannot be correlated

Answer: C



Watch Video Solution

2. Equal weights of Zn metal and iodine are mixed together and I_1 is completely converted to ZnI_2 . What fraction by weight of original Zn remains unreacted? (Zn=65, I=127)

A. 0.34

B. 0.74

C. 0.84

D. Unable to predict

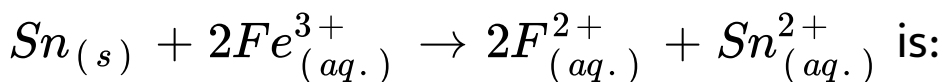
Answer: B



3. Consider the following E_0 values,

$$E_{Fe^{3+}/Fe^{2+}}^0 = +0.77V, E_{Sn^{2+}/Sn}^0 = -0.14V$$

, the E_{cell}^0 for the reaction,



A. 0.63V

B. 1.40V

C. 0.91V

D. 1.68V

Answer: C



Watch Video Solution

4. Total Vapour pressure of mixture of 1molA ($p_A^0 = 150\text{torr}$) and 2molB ($p_B^0 = 240\text{torr}$) is 200torr. In this case

A. there is positive deviation from raoult's law

B. there is negative deviation from raoult's law

C. there is not deviation from Raoult's law

D. molecular masses of A and B are also required

Answer: B



Watch Video Solution

5. During depression of freezing point in a solution, the following are in equilibrium:

A. liquid solvent, solid solvent

B. liquid solvent, solid solute

C. liquid solute, solid solute

D. liquid solute, solid solvent

Answer: A



Watch Video Solution

6. In the temperature of 1 mole of a gas is increased by $50^{\circ} C$. Calculate change in kinetic energy:

A. 62.32J

B. 6.235J

C. 623.5J

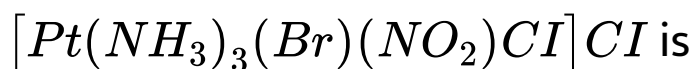
D. 6235.0J

Answer: C



Watch Video Solution

7. IUPAC name of



A. triamminebromochloronitroplatinum

(IV) chloride

B. triamminebromonitrochloroplatinum

(IV) chloride

C. triamminechlorobromonitroplatinum

(IV) chloride

D. triamminenitrochlorobromoplatinum

(IV) chloride.

Answer: A



Watch Video Solution

8. When chlorine is passed through propene at 400° which of the following is formed?

A. PVC

B. Allyl chloride

C. Nickel chloride

D. 1,2-dichloroethane

Answer: B



Watch Video Solution

9. The correct relationship between Gibb's free energy change and the EMF of a cell is

A. $\Delta G^\circ = nFE^\circ$

B. $\Delta G^\circ = -nFE^\circ$

C. $-\Delta G^\circ = \frac{nF}{E^\circ}$

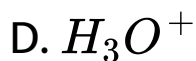
D. $-\Delta G^\circ = \frac{nE^\circ}{F}$

Answer: B



Watch Video Solution

10. Which of the following species has tetrahedral geometry?



Answer: A



Watch Video Solution

11. A copolymer is

A. styrene butadiene rubber

B. polythene

C. terylene

D. nylon

Answer: A



Watch Video Solution

12. When m-chlorobenzaldehyde is treated with 50% KOH solution, the product (s) obtained is (are)

A. 

B. 

C. 

D. 

Answer: D



Watch Video Solution

13. Which of the following is most acidic?

A. Benzyl alcohol

B. 2-butanol

C. tert-butyl alcohol

D. Hydroxybenzene

Answer: D



View Text Solution

14. During a redox titration involving a solution containing Fe^{2+} ions against MnO_4^- in the presence of excess of H^+ ions, the number of electrons, that gets transferred is

A. 6

B. 5

C. 4

D. 2

Answer: B



Watch Video Solution

15. In the commercial electrochemical process for aluminium extraction, the electrolyte used is

A. $Al(OH)_3$ in NaOH solution

B. an aqueous solution of $Al_2(SO_4)_3$

C. a molten mixture of

Al_2O_3 and $Na - (3)AlF_6$

D. a molten mixture of



Answer: C



Watch Video Solution

16. Carbon can reduce ferric oxide to iron at a temperature above 983K, because

A. carbon monoxide formed is

thermodynamically less stable than

ferric oxide

B. carbon has a higher affinity towards oxygen than iron

C. free energy change for the formation of carbon dioxide is less negative than that for ferric oxide

D. iron has a higher affinity towards oxygen than carbon

Answer: B



Watch Video Solution

17. The ionic radii of Rb^+ and I^- are 1.46 and 2.16 Å. The most probable type of structure exhibited by it is:

A. CsCl type

B. NaCl type

C. ZnS type

D. CaF_2 type

Answer: B



Watch Video Solution

18. Which of the following is a nitric acid anhydride?

A. NO

B. NO_2

C. N_2O_5

D. N_2O_3

Answer: C



Watch Video Solution

19. Nitrogen is relatively inactive element because

A. its atom has a stable electronic configuration

B. it has low atomic radius

C. its electronegativity is fairly high

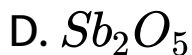
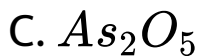
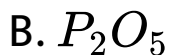
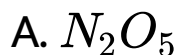
D. dissociation energy of its molecule is fairly high.

Answer: D



Watch Video Solution

20. Which of the following is most acidic?



Answer: A



Watch Video Solution

21. Which one of the following arrangements does not give the correct picture of the trends indicated against it ?

A. $F_2 > Cl_2 > Br_2 > I_2$: Oxidising power

B. $Cl_2 > F_2 > Br_2 > I_2$: Electron gain
enthalpy

C. $F_2 > Cl_2 > Br_2 > I_2$: Bond
dissociation energy

D. $F_2 > Cl_2 > Br_2 > I_2$: Electronegativity

Answer: C



Watch Video Solution

22. Adsorption is accompanied by :-

- A. ΔS of system is negative
- B. Decreases in enthalpy of system
- C. $T\Delta S$ for the process is negative
- D. all of the above

Answer: D



Watch Video Solution

23. Oxidation state of in Fe_3O_4 is

A. $\frac{3}{2}$

B. $\frac{4}{5}$

C. $\frac{5}{4}$

D. $\frac{8}{3}$

Answer: D



Watch Video Solution

24. The Lanthanide contraction is responsible for the fact that

- A. Zr and Yt has about the samme radius
- B. Zr and Nb have similar oxidation state
- C. Zr and Hf have about the same radius
- D. Zr and Zn have the same oxidation state

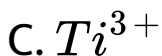
Answer: C



25. The aqueous solution containing which one of the following ions will be colourless

(Atomic number

$Sc = 21, Fe = 26, Ti = 22, Mn = 25$)



Answer: A



Watch Video Solution

26. Which of the following describes the criterion of spontaneity?

A. $\Delta S_{(\text{total})} > 0$

B. $\Delta G_{(T,P)} > 0$

C. $\Delta H_{T P} > 0$

D. none of these

Answer: A



Watch Video Solution

27. Amongst H_2O , H_2S , H_2Se and H_2Te the one with highest boiling point is :

A. H_2O because of hydrogen bonding

B. H_2Te because of higher molecular weight

C. H_2S because of hydrogen bonding

D. H_2Se because of lower molecular weight

Answer: A



Watch Video Solution

28. Lone pair and π -bonds exist in



D. XeO_4

Answer: B



Watch Video Solution

29. Dipole moment and ionisation constant are maximum in case of

A. HF, HF

B. HF, HI

C. HI, HF

D. HI,HI

Answer: B



Watch Video Solution

30. Which of the following is not correct about the solution when moderate amount of sodium metal is dissolved in liquid ammonia at low temperature ?

A. Na^+ ions are formed in the solution

B. Blue coloured solution is obtained

C. Liquid NH_3 becomes good conductor of
electricity

D. Liquid ammonia remains diamagnetic

Answer: D



Watch Video Solution

31. Polyphosphates are used for softening agents because they

- A. form soluble complexes with anionic species
- B. precipitate anionic species
- C. precipitate cationic species
- D. form soluble complexes with cationic species.

Answer: D



Watch Video Solution

32. An organic compound (A) contains 20% C, 46.66% N and 6.66% H. It gave NH_3 gas on heating with NaOH . The organic compound (A) could be



Answer: C



Watch Video Solution

33. Hydrocarbons are formed when aldehydes and ketones are reduced with amalgamated zinc and conc. HCl. The reaction is called:

- A. Clemmensen reduction
- B. Cope reduction
- C. Dow reduction
- D. Wolff-Kishner reduction

Answer: A





34. A compound $CuCl$ has face – centred cubic structure. Its density is $3.4gcm^{-3}$. What is the length of unit cell ?

A. 5.783 \AA

B. 6.783 \AA

C. 7.783 \AA

D. 8.783 \AA

Answer: A



Watch Video Solution

35. An endothermic reaction is non-spontaneous at freezing point of water and becomes feasible at its boiling point, then:

A. $\Delta H =$ negative, $\Delta S =$ positive

B. both ΔH and ΔS are positive

C. Both ΔH and ΔS are negative

D. $\Delta H =$ positive, $\Delta S =$ negative

Answer: B



Watch Video Solution

36. What weight of copper will be deposited by passing 2 faradays of electricity through a cupric salt (atomic weight of $Cu = 63.5$) ?

A. 63.5 g

B. 31.75 g

C. 127 g

D. 2.0 g

Answer: A



Watch Video Solution

37. Two moles of an ideal gas is expanded isothermally and reversibly from 1 liter to 10 liter at $300K$. The enthalpy change (in kJ) for the process

A. 11.4

B. -11.4

C. 0

D. 4.8

Answer: C



Watch Video Solution

38. The enthalpy of vaporisation of a liquid is 30kJmol^{-1} and entropy of vaporisation is $75\text{Jmol}^{-1}\text{K}^{-1}$. The boiling point of the liquid at 1atm is :

A. 250 K

B. 400 K

C. 450 K

D. 600 K

Answer: B



Watch Video Solution

39. For a reaction $1/2A \rightarrow 2B$, rate of disappearance of A is related to the rate of appearance of B by the expression:

A. $-\frac{d[A]}{dt} = \frac{1}{2} \frac{d[B]}{dt}$

B. $-\frac{d[A]}{dt} = \frac{1}{4} \frac{d[B]}{dt}$

C. $-\frac{d[A]}{dt} = \frac{d[B]}{dt}$

D. $-\frac{d[A]}{dt} = 4\frac{d[B]}{dt}$

Answer: B



Watch Video Solution

40. In a first order reaction, the concentration of the reactant decreases from $0.8M$ to $0.4M$ in 15 min. The time taken for the concentration to change from $0.1M$ to $0.025M$ is

A. 60 min

B. 15 min

C. 7.5 min

D. 30 min

Answer: D



Watch Video Solution

41. Stability of which intermediate is not governed by hyperconjugation?

- A. Carbon cation
- B. Carbon anion
- C. carbon free radical
- D. none of the above

Answer: B



Watch Video Solution

42. Aniline is an activated system for electrophilic substitution. The compounds

formed on heating aniline with acetic anhydride is .

A. 

B. 

C. 

D. 

Answer: D



Watch Video Solution

43. Chargaff's rule states that in an organism:

A. amount of adenine (A) is equal to that of cytosine (C) and the amount of thymine (T) is equal to that of guanine (G)

B. amount of all bases are equal

C. amount of adenine (A) is equal to that of thymine (T) and the amount of guanine (G) is equal to that of cytosine (C)

D. amount of adenine (A) is equal to that of guanine (G) and the amount of thymine (T) is equal to that of cytosine (C)

Answer: C



Watch Video Solution

44. p-chloro aniline and anilinium hydrochloride can be distinguished by

A. Sandmeyer reaction

B. $NaHCO_3$

C. $AgNO_3$

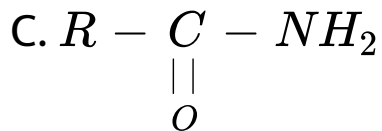
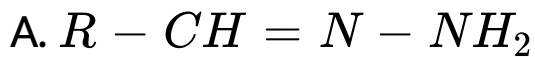
D. carbylamine test

Answer: C



Watch Video Solution

45. During reduction of aldehydes with hydrazine and potassium hydroxide, the first is the formation of



Answer: A



View Text Solution

46. On hydrolysis of starch, we finally get

A. glucose

B. fructose

C. both (a) and (b)

D. sucrose

Answer: A



Watch Video Solution

47. Which of the following can possibly to used as analgesic without causing addiction and mood modification?

A. Morphine

B. Diazepam

C. Tetrahydrocannabinol

D. N-acetyl-para-aminophenol

Answer: D



Watch Video Solution

48. Which of the following has magnesium?

A. Vitamin – B_{12}

B. Chlorophyll

C. Haemocyanin

D. Carbonic anhydrase

Answer: B



Watch Video Solution

49. An alkyl bromine, RBr of molecular weight 151 is the exclusive product of bromination of which hydrocarbon ?

A. Dedecane

B. 2,2-dimethylpropane

C. 2,2-dimethylhexane

D. 2,2,3-trimethylheptane

Answer: B



Watch Video Solution