

Objective Questions for Engg. Chemistry. EAS-102:

Note: Choose correct answer

- 1- Hybridisation of H_2O is:
 - (a) sp^3 (b) sp^2 (c) sp (d) None of them
- 2- How many electrons can accommodate in a molecular orbital:
 - (a) one (b) two (c) three (d) zero
- 3- Which pair is paramagnetic:
 - (a) N_2, C_2 , (b) O_2, N_2 (c) B_2, N_2 (d) O_2, B_2
- 4- Filling of electron in molecular orbitals follows:
 - (a) Aufbau's principle (b) Pauli's Exclusion principle (c) Hund's rule (d) All
- 5- Which molecule will not be exist:
 - (a) He_2 (b) H_2^+ (c) He_2^+ (d) H_2
- 6- which have highest bond order:
 - (a) O_2 (b) O_2^+ (c) O_2^- (d) O_2^{2-}
- 7- Phenyl benzoate is a example of:
 - (a) Gas crystal (b) liquid crystal (c) solid crystal (d) crystalline solid
- 8- Which one is not example of hydrogen bonding:
 - (a) H_2O (b) NH_3 (c) CH_3OH (d) CH_3-O-CH_3
- 9- In graphite the C-C bond is:
 - (a) s-p hybridized (b) $s-p^2$ hybridized (c) sp^3 hybridized (d) sp^3d hybridized
- 10- which one is an example of intra-molecular bonding:
 - (a) CH_3OH (b) CH_3COOH (c) NH_3 (d) o-nitrophenol
- 11- Molecularity of any reaction cannot be:
 - (a) One (b) two (c) three (d) zero
- 12- The order of molecule is related to reactant:
 - (a) concentrations (b) molecularity (c) structure (d) None of them
- 13- Unit of first order reaction is
 - (a) $mol L^{-1} time^{-1}$ (b) $time^{-1}$ (c) $L mol^{-1} time^{-1}$ (d) $L mol^{-1}$
- 14- water can exist in:
 - (a) one phase (b) two phases (c) three phases (d) four phases

- 15- Decomposition of $\text{CaCO}_3 \rightleftharpoons \text{CaO (s)} + \text{CO}_2 \text{ (g)}$ is an example of:
 (a) One component (b) two component (c) three component (d) All these
- 16- At the triple point in phase diagram of water; the component will be:
 (a) zero (b) One (c) two (d) three
- 17- At anode in a electro-chemical reaction:
 (a) Oxidation occur (b) Reduction occur (c) Sublimation occur (d) None of them.
- 18- In electrochemical series negative potential shows
 (a) Easy donation electron (b) None donation of electron (c) Ease acceptance of electron
 (d) passive
- 19- Negative value of ΔG gives an idea about a reaction will be:
 (a) Spontaneous (b) Non-spontaneous (c) Cannot predict (d) None of them
- 20- A green layer on copper surface occurs due to:
 (a) $\text{CuCO}_3 + \text{Fe(OH)}_2$ (b) $\text{CuCO}_3 + \text{Cu(OH)}_2$ (c) $\text{FeCO}_3 + \text{Cu(OH)}_2$ (d) $\text{Fe}_2\text{(OH)}_3$
- 21- A black rust occur on iron surface is due to:
 (a) $\text{Fe}_2\text{O}_3 \cdot \text{H}_2\text{O}$ (b) Fe(OH)_3 (c) Fe_2O_4 (d) Fe_2O_3
- 22- Which one exerts permanent effect:
 (a) Inductive effect (b) Electromeric effect (c) Inductomeric effect
- 23- Which one is the electrophile:
 (a) OH^- (b) H_2O (c) NH_3 (d) AlCl_3
- 24- Which species can give hyperconjugative effect:
 (a) CH_3^+ (b) CH^+ (c) C_2H_5^- (d) $\text{C}_2\text{H}_5\text{O}^-$
- 25- Hybridisation of carbon in carbanion is:
 (a) sp (b) sp^2 (c) sp^3 (d) sp^3d
- 26- Which is most stable species:
 (a) C_2H_5^+ (b) $(\text{CH}_3)_2\text{CH}^+$ (c) $\text{CH}_2 = \text{CH}-\text{CH}_2^+$ (d) $(\text{CH}_3)_3\text{C}^+$
- 27- SN^1 reaction order is:
 (a) 1.5 (b) 0.5 (c) 1.0 (d) 2.0
- 28- Walden inversion occur in:
 (a) SN^2 (b) SN^1 (c) SNE^1 (d) E2
- 29- A aldehyde having α -H when reacted with base is an example of
 (a) Cannizzaro reaction (b) Aldol condensation (c) Diel's Alder reaction
 (d) Beckman rearrangement

- 30- which have higher priority
 (a) $\text{CH}_3\text{-CH}_3$ (b) $\text{CH}_2=\text{CH}_2$ (c) $\text{CH}\equiv\text{CH}$ (d) CH_4
- 31- which one give the optical isomerism
 (a) $\text{CH}_3\text{-CH}_3$ (b) $\text{CH}_3\text{-Cl}$ (c) $(\text{CH}_3)_4\text{C}$ (d) 2-chlorobutane
- 32- Hydride shift occur in
 (a) Aldol condensation (b) Diels-alder reaction
 (c) Cannizzaro reaction (d) Beckman Rearrangement
- 33- Isocyanate intermediate occur in
 (a) Aldol condensation (b) Reimer-Tiemann's reaction
 (c) Hoffmann rearrangement (d) Wittig reaction
- 34- which one is most stable conformation of butane:
 (a) eclipsed (b) Staggered (c) Partially eclipsed (d) Anti
- 35 - Nuclear magnetic resonance occur in:
 (a) ^{12}C (b) ^{14}N (c) ^1H (d) ^{16}O
- 36 - Tetramethyl silane used as the determination of:
 (a) IR active molecule (b) chemical shift (c) UV spectroscopy (d) None of them.
- 37 - Choose IR-active molecule:
 (a) HCl (b) CO_2 (c) CH_4 (d) C_2H_6
- 38 - How many number of NMR signal occur in $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{OH}$:
 (a) one (b) three (c) four (d) five
- 39 - standard solution is:
 (a) Unknown strength soln. (b) Known strength soln.
 (c) given soln. (d) distilled water
- 40 - Hardness of water due to the presence of:
 (a) Ca^{2+} & Mg^{2+} (b) Fe^{2+} & SO_4^{2-} (c) Mn^{2+} & Cu^{2+} (d) SO_4^{2-} & PO_4^{3-}
- 41 - Nylon 6,6 is an example of:
 (a) Addition polymerisation (b) Condensation polymerisation
 (c) Co-polymerisation (d) Co-ordination Polymerisation
- 42: Addition of sulphur in natural rubber called:
 (a) visualisation (b) Casualisation (c) polymerisation (d) Vulcanisation

43- Metals used in Ziegler-Natta catalyst are:

- (a) Ti & Al (b) Fe & Al (c) Fe and Cr (d) Cr & Mn

44- Oxidation state of Mn in $KMnO_4$ is:

- (a) 5 (b) 6 (c) 7 (d) 8

45- Calori is a unit of:

- (a) Temperature (b) Heat (c) Vaporisation (d) Condensation

Answer:

1 - a

26 - c

2 - b

27 - c

3 - d

28 - a

4 - d

29 - b

5 - a

30 - c

6 - b

31 - d

7 - b

32 - c

8 - d

33 - c

9 - b

34 - d

10 - d

35 - c

11 - d

36 - b

12 - a

37 - a

13 - b

38 - c

14 - c

39 - b

15 - b

40 - a

16 - a

41 - b

17 - a

42 - d

18 - a

43 - a

19 - a

44 - c

20 - b

45 - b

21 - c

22 - a

23 - d

24 - b

25 - c