QB365 Question Bank Software Study Materials

Basic Concept of Organic Reactions 50 Important 1 Marks Questions With Answers (Book Back and Creative)

11th Standard

Chemistry

Total Marks : 50

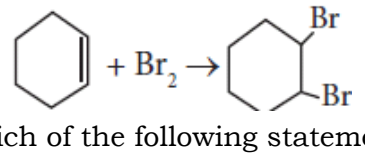
Multiple Choice Question

50 x 1 = 50

1) For the following reactions

(A) $CH_3CH_2CH_2Br + KOH \rightarrow CH_3 - CH = CH_2 + KBr + H_2O$

(B) $(CH_3)_3CBr + KOH \rightarrow (CH_3)_3 COH + KBr$

(C) 

Which of the following statement is correct ?

(a) (A) is elimination, (B) and (C) are substitution (b) (A) is substitution, (B) and (C) are elimination

(c) (A) and (B) are elimination and (C) is addition reaction

(d) (A) is elimination, B is substitution and (C) is addition reaction

2) What is the hybridisation state of benzyl carbonium ion ?

(a) sp^2 (b) spd^2 (c) sp^3 (d) sp^2d

3) Decreasing order of nucleophilicity is _____.

(a) $OH^- > NH_2^- > -OCH_3 > RNH_2$ **(b) $NH_2^- > OH^- > -OCH_3 > RNH_2$** (c) $NH_2^- > CH_3O^- > OH^- > RNH_2$

(d) $CH_3O^- > NH_2^- > OH^- > RNH_2$

4) Which of the following species is not electrophilic in nature ?

(a) Cl^+ (b) BH_3 **(c) H_3O^+** (d) $^+NO_2$

5) Homolytic fission of covalent bond leads to the formation of _____.

(a) electrophile (b) nucleophile (c) Carbo cation **(d) free radical**

6) Hyper Conjugation is also known as _____.

(a) no bond resonance (b) Baker - nathan effect **(c) both (a)and (b)** (d) none of these

7) Which of the group has highest +I effect ?

(a) CH_3^- (b) $CH_3 - CH_2 -$ (c) $(CH_3)_2 - CH-$ **(d) $(CH_3)_3 - C-$**

8) Which of the following species does not exert a resonance effect ?

(a) C_6H_5OH (b) C_6H_5Cl (c) $C_6H_5NH_2$ **(d)** $C_6H_5\overset{+}{N}H_3$

9) -I effect is shown by _____.

(a) -Cl (b) -Br **(c) both (a) and (b)** (d) $-CH_3$

10) Which of the following carbocation will be most stable ?

(a) Ph_3C^+ (b) $CH_3 - \overset{+}{C}H_2$ (c) $(CH_3)_2 - \overset{+}{C}H$ (d) $CH_2 = CH - \overset{+}{C}H_2$

11) Heterolytic fission of C-C bond results in the formation of _____.

(a) free radical (b) Carbanion (c) Carbocation **(d) Carbanion and Carbocation**

Which of the following represent a set of nuclephiles ?

12) (a) BF_3, H_2O, NH^{2-} (b) $AlCl_3$, BF_3, NH_3 **(c) CN^-, RCH_2^-, ROH** (d) H^+, RNH_3^+, $:CCl_2$

13) Which of the following species does not acts as a nucleophile ?

(a) ROH (b) ROR (c) PCl_3 **(d) BF_3**

14) The geometrical shape of carbocation is _____.

(a) Linear (b) tetrahedral **(c) Planar** (d) Pyramidal

15) Which of the following is heterolytic compound?

(a) Pyrrole (b) Furan (c) Thiophene **(d) All of these**

16) In $CH_3 - \underset{CH_3}{\overset{|}{C}}H - CH_3$ most stable radicals/ions formed on homolysis is/a _____

(a) $CH_3 - \underset{CH_3}{\overset{|}{\dot{C}}}H - CH_2$ and H **(b) $CH_3 - \underset{CH_3}{\overset{|}{\dot{C}}}H - CH_2$ and H** (c) $CH_3 - \underset{CH_3}{\overset{|}{\overset{+}{C}}} - CH_3$ and H

(d) $CH_3 - \underset{CH_3}{\overset{|}{\bar{C}}} - CH_3$ and H

17) In $-NO_2$, $-NH_2$, $-SO_3H$, the decreasing order of I II III -I effect is _____

(a) I > II > III **(b) I > III > II** (c) III > II > I (d) III > I > II

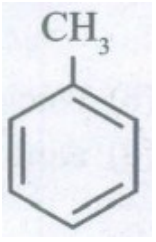
18) CH_2 is an _____

(a) Electrophile (b) Nucleophile (c) Free Radical (d) Ambiphiles

19) The nucleophile is not _____

(a) Lewis base **(b) Lewis acid** (c) $H_2\ddot{O}$ (d) Carbanion

20) The number of hyperconjugation structures possible in _____



(a) 3 (b) 2 (c) 6 (d) None of these

21) The electrometric effect is _____

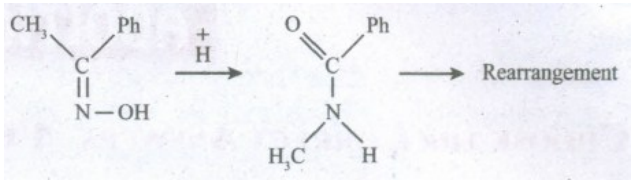
(a) Permanent effect (b) Temporary effect (c) p-electrons transfer in the effect **(d) Both (b) and (c)**

22) CH3 - CH = CH - CH_3 + $Br_2 \longrightarrow CH_3 - \underset{Br}{\overset{|}{CH}} - \underset{Br}{\overset{|}{CH}} - CH_3$ is an _____

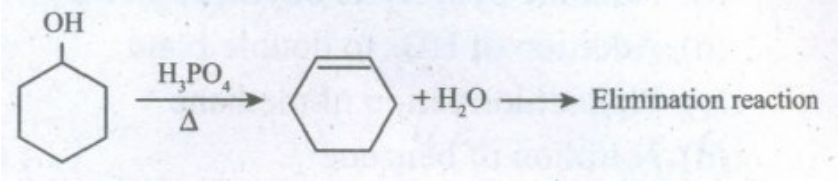
(a) Substitution reaction (b) Elimination reaction **(c) Electrophilic addition reaction.**

(d) Nucleophilic addition reaction

23) Which one is incorrect match of reactions ?

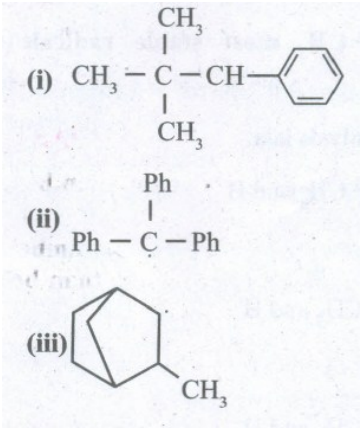
(a) 

(b) $CH_3 - CH_2 - Br \overset{aq.\ KOH}{\longrightarrow} CH_3 - CH_2OH \rightarrow$ Nucleophilic substitution reaction

(c) 

(d) $(CH_3)C - Cl \overset{+H}{\longrightarrow} (CH_3)_3C - CH_2 + H_2O + Cl^- \rightarrow$ **Nucleophilic substitution reaction**

24) Consider the following compounds,



Hyper conjugation occurs in _____

(a) (i) and (iii) (b) (i) only (c) (ii) only **(d) (iii) only**

25) Assertion (A) : Phenol is less acidic than benzoic acid.

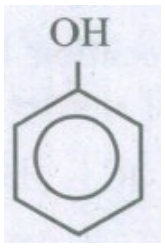
Reason (R) : Phenoxide has less number of resonating structures than benzyl carboxylate ion.

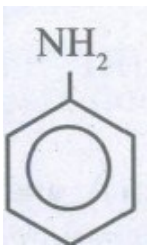
(a) Both A and R are true and R is the correct explanation of A.

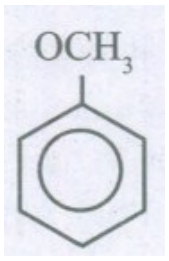
(b) Both A and R are true but R is not the correct explanation of A. **(c) A is true but R is false.**

(d) Both A and R are false.

26) In which of the following, the group attached to the benzene ring shows +R effect ?

(a) 

(b) 

(c) 

(d) All of these

27) Which of the following compound can show resonance ?

(a) $CH_2 = CH - CH = CH_2$ (b) $CH_2 = CH - CHO$ (c) $CH_2 = CH - NH_2$ (d) All of these

28) Electromeric effect involves the complete transfer of _____

(a) σ-electron **(b) π--electron** (c) proton (d) both σ and π electrons

29) Statement - I : All the organic molecules contain covalent bonds.

Statement - II : Organic molecules are formed by the mutual sharing of electrons between atoms.

(a) Statement-I and II are correct and statement-II is correct explanation of statement-I.

(b) Statement-I and II are correct but Statement-II is not correct explanation of statement-I.

(c) Statement-I is correct but statement-II is wrong. (d) Statement-I is wrong but statement-II is correct.

30) Statement - I : Homolytic cleavage is symmetrical one.

Statement - II : A single covalent bond breaks and each of the bonded atoms retains one electron.

(a) Statement-I and II are correct and statement-II is correct explanation of statement-I.

(b) Statement-land II are correct but statement-I! is not correct explanation of statement-I.

(c) Statement-I is correct but statement-II is wrong. (d) Statement-I is wrong but statement-II is correct.

31) Which one of the following is correct order of stability of alkyl free radicals ?

(a) $\dot{C}(CH_3)_3 > \dot{C}H(CH_3)_2 > \dot{C}H_2CH_3 > \dot{C}H_3$ (b) $\dot{C}H_3 > \dot{C}H_2CH_3 > \dot{C}H(CH_3)_2 > \dot{C}(CH_3)_3$

(c) $\dot{C}H(CH_3)_2 > \dot{C}H_3 > \dot{C}H_2CH_3 > \dot{C}(CH_3)_3$ (d) $\dot{C}H_2CH_3 > \dot{C}H(CH_3)_2 > \dot{C}(CH_3)_3 > \dot{C}H_3$

32) Which one of the following is correct order of the stability of carbanions ?

(a) $-C(CH_3)_3 > \bar{C}H(CH_3)_2 > \bar{C}H_2\bar{C}H_3 > \bar{C}H_3$ (b) $\bar{C}H_3 > \bar{C}H_2\bar{C}H_3 > \bar{C}H(CH_3)_2 > \bar{(}CH_3)_3$

(c) $\bar{C}H(CH_3)_2 > \bar{H}_3 > \bar{C}H_2\bar{C}H_3 > \bar{(}CH_3)_3$ (d) $\bar{C}H_2\bar{C}H_3 > \bar{C}H(CH^3)_2 > \bar{C}H_3 > \bar{(}CH_3)_3$

33) Which one of the following is not nucleophile ?

(a) H_2O (b) NH_3 (c) R-OH **(d) $FeCl_3$**

34) Which one of the following is nucleophile ?

(a) BF_3 (b) $AICl_3$ (c) CO_2 **(d) R-SH**

35) Which one of the following species has tendency to show-I effect ?

(a) $^-CH_3$ (b) $^-CH_2{}^-CH_3$ (c) $^-CH(CH^3)_2$ **(d) $^-C_6H_5$**

36) Which one of the following has strongest acidic character ?

(a) HCOOH (b) CH_3COOH (c) $CH_2CICOOH$ (d) CCl_3COOH

37) Statement - I : Fluoro acetic acid is stronger acid than acetic acid
Statement - II : Fluorine has high electronegativity and it is facilitate to dissociate the O-H bond easily.

(a) Statement-I and II are correct and statement-II is correct explanation of statement-I.

(b) Statement-I and II are correct but statement-II is not correct explanation of statement-I.

(c) Statement-I is correct but statement-II is wrong (d) Statement-I is wrong but statement-II is correct

38) Which one of the following is an example for negative mesomeric effect ?

(a) -SH (b) -SR (c) $-NH_2$ **(d) $-NO_2$**

39) Which one of the following electrophile used for nitration of benzene ?

(a) $Br^{\oplus}$ **(b) $NO_2{}^{\oplus}$** (c) $-NH_2$ (d) $NO^{\ominus}$

40) Identify the one which does not come under the organic addition reaction.

(a) Hydration **(b) Dehydration** (c) Halogenation (d) Hydro halogenation

41) AIBN is _____.

(a) Azobisisobutyronitile (b) Azobisulphide nitrile (c) Azobis iso butyl nitrato (d) Azobisulphate nitro

42) The order of relative stability of carbanions is ____.

(a) $-C(CH_3)_3 > -CH(CH_3)_2 > -CH_2CH_2 > -CH_3$ **(b) $-C(CH_3)_3 < -CH(CH_3)_2 < -CH_2CH_3 < -CH_3$**

(c) $C\,(CH_3) > -CH(CH_3)_2 > -CH_2CH_3 < -CH_3$ (d) $-C\,(CH_3) > -CH(CH_3)_2 < -CH_2CH_3 > -CH_3$

43) All Lewis acids act as ____.

(a) nucleophiles **(b) electrophile** (c) neutral compounds (d) bases

44) Which one is involved photochemical fission?

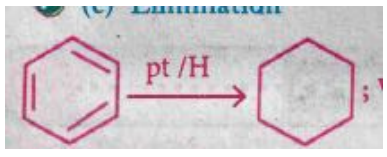
(a) Cl_2 (b) NaCl (c) CH_4 (d) None

45) Atoms or groups having lesser electron affinity than hydrogen are said to be _____ groups

(a) +I (b) -I (c) -M (d) +M

46) When the π electron is transferred towards the attacking reagent it is called _____ effect.

(a) +E (b) -E (c) +R (d) -I

47) 

Which type of reaction is this?

(a) Oxidation **(b) Reduction** (c) Redox (d) None of these

48) Apple contains _____ an enzyme called which is also known as tyrosinase.

(a) PPO (b) BDO (c) BBO (d) NCO

49) Hyper conjucation effect is also observed when atoms/groups having lone pair electrons are attached by a single bond and in conjunction with a _____ bond.

(a) σ **(b)** π (c) Both (a) & (b) (d) H - bond

50) The stability of various carbocations decrease in the order _____.

(a) $3^\circ > 2^\circ > 1^\circ$ (b) $1^\circ < 2^\circ < 3^\circ$ (c) $3^\circ < 2^\circ > 1^\circ$ (d) $1^\circ > 2^\circ < 3^\circ$