



Brain Molecules

Chemistry for class 11 and 12 CBSE Board.

CLASS 12 ORGANIC COMPLETE REASONING

Class 12 - Chemistry

Time Allowed: 2 hours

Maximum Marks: 73

General Instructions:

Use of calculator is not allowed.

- Assertion (A):** Benzyl chloride is more reactive than p-chlorotoluene towards aqueous NaOH. [1]
Reason (R): The C - Cl bond in benzyl chloride is more polar than C - Cl bond in p-chlorotoluene.
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) A is false but R is true.
- Assertion (A):** Aryl halide gives a mixture of o- and p-products. [1]
Reason (R): Aryl halides undergo electrophilic substitutions more readily than benzene.
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) A is false but R is true.
- Assertion (A):** KCN reacts with methyl chloride to give methyl isocyanide. [1]
Reason (R): CN^- is an ambident nucleophile.
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) A is false but R is true.
- Assertion (A):** $\text{S}_{\text{N}}2$ reaction of an optically active aryl halide with an aqueous solution of KOH always gives an alcohol with opposite sign of rotation. [1]
Reason (R): $\text{S}_{\text{N}}2$ reactions always proceed with inversion of configuration.
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) A is false but R is true.
- Assertion (A):** 1-Iodopropane and 2-iodopropane are chain isomers. [1]
Reason (R): These differ in the position of I in the carbon chains.
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) A is false but R is true.
- Assertion (A):** Vinyl halides do not give nucleophilic substitution reaction. [1]

Reason (R): Vinyl group is electron donating in vinyl halides.

- 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) A is false but R is true.

7. **Assertion (A):** Addition of Br_2 to trans-2-butene yields meso-2,3-dibromobutane. [1]

Reason (R): Bromine addition to an alkene is an electrophilic addition reaction.

- 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) A is false but R is true.

8. **Assertion (A):** Addition of Br_2 to but-1-ene gives two optical isomers. [1]

Reason (R): The product contains one asymmetric carbon atom.

- 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) A is false but R is true.

9. **Assertion (A):** Quaternary ammonium salt on reaction with base give Hofmann's alkene as major product. [1]

Reason (R): When leaving groups are poor then partial anionic character develop in transition state.

- 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) A is false but R is true.

10. **Assertion (A):** The nitration of chlorobenzene leads to the formation of m-nitrochlorobenzene. [1]

Reason (R): $-\text{NO}_2$ group is an m-directing group.

- 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) A is false but R is true.

11. **Assertion (A):** $\text{S}_{\text{N}}1$ mechanism is facilitated by polar protic solvents like water, alcohol, etc. [1]

Reason (R): $\text{C}_6\text{H}_5\text{CH}(\text{C}_6\text{H}_5)\text{Br}$ is less reactive than $\text{C}_6\text{H}_5\text{CH}(\text{CH}_3)\text{Br}$ in $\text{S}_{\text{N}}1$ reactions.

- 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) A is false but R is true.

12. **Assertion (A):** Exposure of ultraviolet rays to human causes the skin cancer, disorder and disrupt the immune system. [1]

Reason (R): Carbon tetrachloride is released into air it rises to atmosphere and deplets the ozone layer.

- 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) A is false but R is true.

13. **Assertion (A):** Benzyl bromide when kept in acetone water produces benzyl alcohol. [1]

Reason (R): The reaction follows the $\text{S}_{\text{N}}2$ mechanism.

- 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) A is false but R is true.
14. **Assertion (A):** In monohaloarenes, further electrophilic substitution occurs at ortho and para positions. [1]
Reason (R): Halogen atom is a ring deactivator.
- 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) A is false but R is true.
15. **Assertion (A):** Isopropyl chloride is less reactive than CH_3Br in $\text{S}_{\text{N}}2$ reactions. [1]
Reason (R): $\text{S}_{\text{N}}2$ reactions are always accompanied by inversion of configuration.
- 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) A is false but R is true.
16. **Assertion (A):** Tertiary haloalkanes are more reactive than primary haloalkanes towards elimination reactions. [1]
Reason (R): The +I-effect of the alkyl groups weakens the C-X bond.
- 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) A is false but R is true.
17. **Assertion (A):** Tert-Butyl bromide undergoes Wurtz reaction to give 2, 2, 3, 3-tetramethyl butane. [1]
Reason (R): In Wurtz reaction, alkyl halides react with sodium in dry ether to give hydrocarbon containing double the number of carbon atoms present in the halide.
- 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) A is false but R is true.
18. **Assertion (A):** 2-Chloro-3-methylbutane on treatment with alcoholic potash gives 2-methylbut-2-ene as major product. [1]
Reason (R): The reaction occurs according to Saytzeff rule.
- 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) A is false but R is true.
19. **Assertion (A):** 2-Bromobutane on reaction with $\text{C}_2\text{H}_5\text{O}^{\ominus}\text{Na}^{\oplus}$ give 2-Butene. [1]
Reason (R): 1-Butene is more stable than 2-Butene.
- 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) A is false but R is true.
20. Alkyl halides are insoluble in water [1]
- a) the force of attraction between the alkyl b) alkyl halides are non polar compounds

halide and water is weaker and cannot overcome the force of attraction between alkyl halide and alkyl halide as also that of water and water molecules

- c) high energy is released when new attractions are set up between the haloalkane and the water molecules
- d) weak hydrogen bonds exist between water molecules

21. **Assertion (A):** The major products formed by heating $C_6H_5CH_2OCH_3$ with HI are $C_6H_5CH_2I$ and CH_3OH . [1]

Reason (R): Benzyl cation is more stable than methyl cation.

- 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) A is false but R is true.

22. **Assertion (A):** Phenols give o- and p-nitrophenol on nitration with conc. HNO_3 and H_2SO_4 mixture. [1]

Reason (R): -OH group in phenol is o-, p-directing.

- 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) A is false but R is true.

23. **Assertion (A):** Glycerol gives 2 moles formaldehyde and one-mole formic acid with HIO_4 . [1]

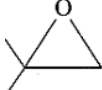
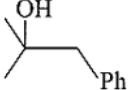
Reason (R): Glycerol is 1,2,3-propanetriol.

- 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) A is false but R is true.

24. **Assertion (A):** Boiling points of alcohols are lower than hydrocarbons. [1]

Reason (R): Among isomeric alcohols, the boiling point decreases in the order: $1^\circ > 2^\circ > 3^\circ$.

- 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) A is false but R is true.

25. **Assertion (A):** CH_3MgBr on reaction with  produce  as product. [1]

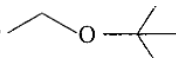
Reason (R): Reaction of CH_3MgBr with cyclic ether is nucleophilic addition reaction.

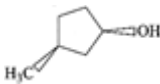
- a) Both A and R are true and R is the correct explanation of A.
- b) Both A and R are true but R is not the correct explanation of A.
- c) A is true but R is false.
- d) A is false but R is true.

26. **Assertion (A):** p-Nitrophenol gives more electrophilic substituted compound than m-methoxyphenol. [1]

Reason (R): Methoxy group shows both +R and -I-effect.

- 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) A is false but R is true.
27. **Assertion (A):** The C-O-C bond angle in ethers is slightly less than the tetrahedral angle. [1]
Reason (R): Due to the repulsive interaction between the two alkyl groups in ethers.
- 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) A is false but R is true.
28. **Assertion (A):** Hydrolysis of ether  with aq. HI is S_N1 reaction. [1]
Reason (R): I[⊖] is strong nucleophile so, it attacks from less hindered side.
- 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) A is false but R is true.
29. **Assertion (A):** 2-Butanol on heating with H₂SO₄ gives 1-butene and 2-butene. [1]
Reason (R): Dehydration of 2-butanol follows Saytzeff's rule.
- 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) A is false but R is true.
30. **Assertion (A):** With HI at 373 K, ter-butyl methyl ether gives ter-butyl iodide and methanol. [1]
Reason (R): The reaction occurs by S_N2 mechanism.
- 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) A is false but R is true.
31. **Assertion:** Addition reaction of water to but-1-ene in acidic medium yields butan-1-ol. [1]
Reason: The addition of water in acidic medium proceeds through the formation of a primary carbocation.
- a) Assertion and reason both are correct and reason is correct explanation of assertion. b) Assertion and reason both are wrong statements.
c) The assertion is a correct statement but the reason is the wrong statement. d) The assertion is a wrong statement but the reason is the correct statement.
32. **Assertion (A):** Phenol undergoes Kolbe's reaction whereas ethanol does not. [1]
Reason (R): Phenoxide ion is more basic than ethoxide 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) A is false but R is true.
33. **Assertion (A):** The boiling points of alcohols are higher than those of hydrocarbons of comparable molecular mass. [1]
Reason (R): Alcohols show intramolecular hydrogen bonding.
- a) Both A and R are true and R is the correct explanation of A. b) Both A and R are true and R is the correct explanation of A.

- c) A is true but R is false. d) A is false but R is true.
34. **Assertion (A):** With $\text{Br}_2 - \text{H}_2\text{O}$, phenol gives 2,4,6-tribromophenol but with $\text{Br}_2 - \text{CS}_2$, it gives 4-bromophenol as the major product. [1]
Reason (R): In water, ionisation of phenol is enhanced but in CS_2 , it is greatly suppressed.
- 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) A is false but R is true.
35. **Assertion (A):** Dehydration of alcohols with conc. acid at high temperature give saytzeff alkenes as major product. [1]
Reason (R): Dehydration of alcohols proceed by carbanion intermediate.
- 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) A is false but R is true.
36. **Assertion (A):** The reaction of the alcohol with SOCl_2 is catalyzed by the presence of a tertiary amine (R_3N). [1]
Reason (R): Tertiary amine promotes the reaction by reacting with the by-product HCl .
- 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) A is false but R is true.
37. **Assertion:** Reaction of  with SOCl_2 proceed with inversion of configuration. [1]
Reason: Reaction of alcohol with SOCl_2 is $\text{S}_{\text{N}}2$ reaction.
- a) If both Assertion and Reason are right and Reason is the right explanation of Assertion. b) If both Assertion and Reason are right but Reason is not the right explanation of Assertion.
 c) If Assertion is right but Reason is wrong. d) If both Assertion and Reason are wrong.
38. **Assertion (A):** Phenol undergoes Kolbe's reaction but ethanol does not. [1]
Reason (R): Phenol is more acidic than ethanol.
- 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) A is false but R is true.
39. **Assertion (A):** Glycerol does not react with HI . [1]
Reason (R): 2 - Iodopropane can be produced by treatment of glycerol with HI .
- 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) A is false but R is true.
40. **Assertion (A):** The C-O-C bond angle in ethers is higher than H-O-H bond angle in water. [1]
Reason (R): Oxygen in both ethers and water is sp^3 hybridized.

- 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) A is false but R is true.
41. **Assertion:** $R - \overset{\text{O}}{\parallel}{C} - OR'$ on reduction with LiAlH_4 give carboxylic acid and alcohol. [1]
Reason: LiAlH_4 is weak reducing agent.
- a) If both Assertion and Reason are right and Reason is right explanation of Assertion. b) If both Assertion and Reason are right but Reason is not right explanation of Assertion.
- c) If Assertion is right but Reason is wrong. d) If both Assertion and Reason are wrong.
42. **Assertion (A):** Aldol condensation is usually carried out in a dilute solution of a strong base. [1]
Reason (R): Concentrated solution of strong base involves Cannizzaro reaction.
- 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) A is false but R is true.
43. **Assertion (A):** Oxidation of ketones is easier than aldehydes. [1]
Reason (R): C-C bond of ketones is stronger than the C-H bond of aldehydes.
- 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) A is false but R is true.
44. **Assertion (A):** RMgX on reaction with CO_2 gives $R - \overset{\text{O}}{\parallel}{C} - OH$ [1]
Reason (R): RMgX on reaction with carbonyl compounds give alcohols.
- 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) A is false but R is true.
45. **Assertion (A):** Pentan-2-one can be distinguished from pentan-3-one by iodoform test. [1]
Reason (R): Former is methyl ketone while the latter is not.
- 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) A is false but R is true.
46. **Assertion:** Hoffmann's bromamide reaction is given by primary amines. [1]
Reason: Primary amines are less basic than secondary amines.
- a) Both assertion and reason are wrong. b) Both assertion and reason are correct statements but reason is not correct explanation of assertion.
- c) Assertion is correct statement but reason is wrong statement. d) Both assertion and reason are correct statements and reason is correct explanation

of assertion.

47. **Assertion (A):** Acetanilide is less basic than aniline. [1]
Reason (R): Acetylation of aniline results in a decrease of electron density on nitrogen.
- 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) A is false but R is true.
48. **Assertion (A):** Aniline on nitration with $\text{HNO}_3 + \text{H}_2\text{SO}_4$ give m-product in higher extent. [1]
Reason (R): Aniline reacts with H^\oplus from mixed acid to form deactivated anilinium 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) A is false but R is true.
49. **Assertion:** Aromatic 1° amines can be prepared by Gabriel Phthalimide Synthesis. [1]
Reason: Aryl halides undergo nucleophilic substitution with anion formed by phthalimide.
- a) Both assertion and reason are wrong. b) Both assertion and reason are correct statements but reason is not correct explanation of assertion.
c) Assertion is correct statement but the reason is the wrong statement. d) Both assertion and reason are correct statements and reason is correct explanation of assertion.
50. **Assertion (A):** Aniline on bromination gives 2, 4, 6-tribromoaniline. [1]
Reason (R): $-\ddot{\text{N}}\text{H}_2$ is moderate activating group.
- 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) A is false but R is true.
51. **Assertion (A):** Nitrating mixture used for carrying out nitration of benzene consists of conc. HNO_3^+ conc. H_2SO_4 [1]
Reason (R): In presence of H_2SO_4 , HNO_3 acts as a base and produces NO_2^+ ions.
- 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) A is false but R is true.
52. **Assertion (A):** p-toluidine is a stronger base than m-toluene. [1]
Reason (R): Methyl group from m-position exerts a smaller electron-donating inductive (+I) effect than from p-position.
- 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) A is false but R is true.
53. **Assertion (A):** Amines are basic in nature. [1]

Reason (R): Amines have lone pair of electrons on the nitrogen atom.

- 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) A is false but R is true.

54. **Assertion (A):** Alpha (α)-amino acids exist as internal salt in solution as they have amino and carboxylic acid groups in near vicinity. [1]

Reason (R): H^+ ion given by carboxylic group (-COOH) is captured by amino group (-NH₂) having lone pair of electrons.

- 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) A is false but R is true.

55. **Assertion:** Glycosides are hydrolyzed in acidic conditions. [1]

Reason: Glycosides are acetals.

- a) If both Assertion & Reason are true and the reason is the correct explanation of the assertion b) If both Assertion & Reason are true but the reason is not the correct explanation of the assertion
c) If Assertion is true statement but Reason is false d) If both Assertion and Reason are false statements.

56. **Assertion (A):** D-glucose and D-mannose form same osazone with phenylhydrazine. [1]

Reason (R): Osazone formation involves only the last four carbon atoms.

- 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) A is false but R is true.

57. **Assertion (A):** Sucrose is a non-reducing sugar. [1]

Reason (R): It has a glycosidic linkage.

- 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) A is false but R is true.

58. **Assertion (A):** Maltose is a reducing sugar that gives two moles of D-glucose on hydrolysis. [1]

Reason (R): Maltose has a 1, 4- β -glycosidic linkage.

- 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) A is false but R is true.

59. **Assertion (A):** Glycosides are hydrolysed in acidic conditions. [1]

Reason (R): Glycosides are acetals.

- 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) A is false but R is true.
60. **Assertion (A):** Sucrose is called invert sugar. [1]
Reason (R): On hydrolysis, sucrose bring the change in the sign of rotation from dextro (+) to laevo(-).
- 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) A is false but R is true.
61. **Assertion:** DNA molecules and RNA molecules are found in the nucleus of a cell. [1]
Reason: On heating, the enzymes do not lose their specific activity.
- a) If both Assertion & Reason are true and the reason is the correct explanation of the assertion b) If both Assertion & Reason are true but the reason is not the correct explanation of the assertion
c) If Assertion is true statement but Reason is false d) If both Assertion and Reason are false statements,
62. **Assertion (A):** Cellulose is not digested by human beings. [1]
Reason (R): Cellulose is a polymer of β -D-glucose.
- 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) A is false but R is true.
63. **Assertion (A):** Except glycine, all naturally occurring α -amino acids are optically active. [1]
Reason (R): All α -amino acids occurring naturally except glycine has at least one asymmetric carbon.
- 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) A is false but R is true.
64. **Assertion (A):** At isoelectric point, the amino group does not migrate under the influence of electric field. [1]
Reason (R): At isoelectric point, amino acid exists as a zwitterion.
- 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) A is false but R is true.
65. **Assertion (A):** Glucose when treated with CH_3OH in presence of dry HCl gas gives α - and β -methyl glucosides. [1]
Reason (R): Glucose reacts with phenylhydrazine to form crystalline osazone.
- 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) A is false but R is true.
66. **Assertion (A):** β -pleated sheet structure of protein shows maximum extension. [1]
Reason (R): Intermolecular hydrogen bonding is present in them.
- 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) A is false but R is true.
67. **Assertion (A):** Fructose reduces Fehling's solution and Tollens' reagent. [1]
Reason (R): Fructose does not contain any aldehyde group.
- 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) A is false but R is true.
68. **Assertion:** Deoxyribose, $C_5H_{10}O_4$ is not a carbohydrate. [1]
Reason: Carbohydrates are hydrates of carbon so compounds that follow $C_x(H_2O)_y$ formula are carbohydrates.
- a) Assertion and reason both are correct statements and reason explain the assertion. b) Both assertion and reason are wrong statements.
c) The assertion is the correct statement and reason is the wrong statement. d) The assertion is the wrong statement and reason is the correct statement.
69. **Assertion (A):** Amino acids are insoluble in benzene and ether. [1]
Reason (R): Amino acids exist as zwitter ions.
- 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) A is false but R is true.
70. **Assertion (A):** A solution of sucrose in water is dextro-rotatory. But on hydrolysis in the presence of a little hydrochloric acid, it becomes laevorotatory. [1]
Reason (R): Sucrose on hydrolysis gives unequal amounts of glucose and fructose. As a result of this, the change in sign of rotation is observed.
- 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) A is false but R is true.
71. **Assertion (A):** Insulin is a globular protein. [1]
Reason (R): Gum is a polymer of more than one type of monosaccharides.
- 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) A is false but R is true.
72. **Assertion:** Fructose can reduce Tollen's reagent. [1]
Reason: Fructose is a ketone.
- 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) A is false but R is true.
73. **Assertion (A):** Mg is not present in the enamel of human teeth. [1]
Reason (R): Mg is an essential element for the biological functions of humans.
- 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) A is false but R is true.

*Brain Molecules (Anil
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