

## MODEL QUESTION PAPER SET –C

### CLASS 12

### SUB-CHEMISTRY AND BIOMOLECULES )

### ( P -block ELEMENTS

1. Which has the lowest boiling point?
  - a.  $\text{NH}_3$
  - b.  $\text{PH}_3$
  - c.  $\text{AsCl}_3$
  - d.  $\text{SbH}_3$
2. Which of the following members of nitrogen family does not show negative oxidation state?
  - a. Pb
  - b. As
  - c. Sb
  - d. Bi
3. The compound of nitrogen in which nitrogen shows -3 oxidation state is
  - a.  $\text{NF}_3$
  - b.  $\text{NH}_3$
  - c.  $\text{NCl}_3$
  - d.  $\text{N}_2\text{O}_3$
4. Which of the following oxides of nitrogen are coloured in nature?
  - a.  $\text{NO}_2$
  - b.  $\text{NH}_3$
  - c.  $\text{N}_2\text{O}_5$
  - d.  $\text{NO}$
5. Which One is a Metalloid?
  - a. Sb.
  - b. Zn.

- c. Bi.
- d. Pb.

6. The  $\text{BCl}_3$  is planar molecule, whereas  $\text{NCl}_3$  is a pyramidal because:

- a. N-Cl bond more covalent bond than B-Cl bond.
- b. B-Cl bond is more polar than N-Cl bond
- c. Nitrogen atom is similar to boron atom.
- d.  $\text{BCl}_3$  has no lone pair but  $\text{NCl}_3$  has a lone pair of electrons.

7. Which of the following molecule is linear?

- a.  $\text{SO}_2$
- b.  $\text{NO}_2^+$
- c.  $\text{NO}_2^-$
- d.  $\text{SCl}_2$

8. An example of a neutral oxide is

- a. NO
- b.  $\text{CO}_2$
- c. CaO
- d. ZnO

9. The brown ring test for nitrates depends on:

- a. The reduction of nitrate to nitric oxide.
- b. Oxidation of nitric oxide to nitrogen dioxide.
- c. Reduction of ferrous Sulphate to iron.
- d. Oxidizing action of Sulphuric acid.

10. The most acidic of the following compound is

- a.  $\text{P}_2\text{O}_5$
- b.  $\text{Sb}_2\text{O}_3$
- c. NaOH
- d.  $\text{As}_2\text{O}_3$

11. Arrange the following hydrides of group 16 elements in order of increasing stability

- a.  $\text{H}_2\text{S} < \text{H}_2\text{O} < \text{H}_2\text{Te} > \text{H}_2\text{Se}$
- b.  $\text{H}_2\text{O} < \text{H}_2\text{Te} < \text{H}_2\text{Se} < \text{H}_2\text{S}$
- c.  $\text{H}_2\text{O} < \text{H}_2\text{S} < \text{H}_2\text{Se} < \text{H}_2\text{Te}$
- d.  $\text{H}_2\text{Te} < \text{H}_2\text{Se} < \text{H}_2\text{S} < \text{H}_3\text{O}$

12. Which one of the following molecules contains no  $\pi$  bonds?
- $\text{CO}_2$
  - $\text{H}_2\text{O}$
  - $\text{SO}_2$
  - $\text{NO}_2$
13. Identify the incorrect statement from the following
- Oxides of nitrogen in the atmosphere can cause the depletion of ozone layer
  - Ozone absorbs the intense ultraviolet radiations of the sun
  - Depletion of ozone layer is because of its chemical reactions with CFC
  - Ozone absorbs infrared radiations.
14. Bleaching action of  $\text{SO}_2$  is due to:
- Reduction
  - Oxidation
  - Hydrolysis
  - None of the above
15. The correct order of electron affinity of B, C, N, O is:
- $\text{O} > \text{C} > \text{N} > \text{B}$
  - $\text{B} > \text{N} > \text{C} > \text{O}$
  - $\text{O} > \text{C} > \text{B} > \text{N}$
  - $\text{O} > \text{B} > \text{C} > \text{N}$
16. Consider the following molecules:
- (I)  $\text{H}_2\text{O}$   
(II)  $\text{H}_2\text{S}$   
(III)  $\text{H}_2\text{Se}$   
(IV)  $\text{H}_2\text{Te}$
- Arrange these molecules in increasing order of bond angle.
- $\text{I} < \text{II} < \text{III} < \text{IV}$
  - $\text{IV} < \text{III} < \text{II} < \text{I}$
  - $\text{I} < \text{II} < \text{IV} < \text{III}$
  - $\text{II} < \text{IV} < \text{III} < \text{I}$
17. The compound of Sulphur that can be used as refrigerant is-

- a.  $\text{SO}_2$
- b.  $\text{SO}_3$
- c.  $\text{S}_2\text{Cl}_2$
- d.  $\text{H}_2\text{SO}_4$

18. Which of the following causes damage to the building containing calcium and responsible for cough and choking in human?

- a. Sulphur
- b. Carbon
- c. Sulphur dioxide
- d. Nitrogen dioxide

19. Which of the following statements regarding Sulphur is incorrect?

- a.  $\text{S}_2$  molecule is paramagnetic.
- b. The vapour at  $200^\circ\text{C}$  consists mostly of  $\text{S}_8$  rings.
- c. At  $600^\circ\text{C}$  the gas mainly consists of  $\text{S}_2$  molecules.
- d. The oxidation state of Sulphur is never less than +4 in its compounds.

20. All the elements of oxygen family are:

- a. Non-metals
- b. Metalloid
- c. radioactive
- d. metal

21. Element found from sea water is

- a. magnesium
- b. Sodium
- c. Iodine
- d. none of these

22. The increasing order of reducing power of the halogen acids is

- (a)  $\text{HF} < \text{HCl} < \text{HBr} < \text{HI}$
- (b)  $\text{HI} < \text{HBr} < \text{HCl} < \text{HF}$
- (c)  $\text{HBr} < \text{HCl} < \text{HF} < \text{HI}$
- (d)  $\text{HCl} < \text{HBr} < \text{HF} < \text{HI}$

23. HCl is gas but HF is a low boiling liquid. This is because

- (a) H-F bond is strong
- (b) H-F bond is weak
- (c) Molecules aggregate because of hydrogen bonding
- (d) HF is a weak acid

24. When chlorine reacts with cold and dilute solution of sodium hydroxide, it forms

- (a)  $\text{Cl}^-$  and  $\text{ClO}^-$
- (b)  $\text{Cl}^-$  and  $\text{ClO}_2^-$
- (c)  $\text{Cl}^-$  and  $\text{ClO}_3^-$
- (d)  $\text{Cl}^-$  and  $\text{ClO}_4^-$

25. Which has the highest Bond Energy:

- (a)  $\text{F}_2$
- (b)  $\text{Cl}_2$
- (c)  $\text{Br}_2$
- (d)  $\text{I}_2$

26. Which of the following halogens doesn't exhibit positive oxidation state in its compounds?

- a. Bromine
- b. Chlorine
- c. Fluorine
- d. Iodine

27. Which of the following interhalogens compounds does not exist?

- a.  $\text{ICl}$
- b.  $\text{ICl}_2$
- c.  $\text{ICl}_3$
- d.  $\text{IF}_5$

28. Which of the following statements is correct about halogens?

- a. They are all capable of exhibiting more than one oxidation states

- b. They are all diatomic and form diatomic ions
  - c. They are all diatomic and form univalent ions
  - d. They are all reducing agents
29. Which of the following bond will be the most polar?
- a. N-N
  - b. N-Cl
  - c. C-F
  - d. O-F
30. Which set have the strongest tendency to form anions?
- a. Ga, In, Te
  - b. Na, Mg, Al
  - c. N, O, F
  - d. V, Cr, Mn
31. The formation of  $\text{O}_2^+ [\text{PtF}_6]^-$  is the basis for the formation of first xenon compound. This \_\_\_\_\_ is because
- (a)  $\text{O}_2$  and Xe have different sizes.
  - (b) Both  $\text{O}_2$  and Xe are gases.
  - (c)  $\text{O}_2$  and Xe have comparable electro-negativities.
  - (d)  $\text{O}_2$  and Xe have comparable ionisation enthalpies.
32. Partial hydrolysis of  $\text{XeF}_4$  gives
- (a)  $\text{XeO}_3$
  - (b)  $\text{XeOF}_2$
  - (c)  $\text{XeOF}_4$
  - (d)  $\text{XeF}_2$
33. The hybridisation of sulphur in sulphur hexafluoride is
- (a)  $sp^3d$
  - (b)  $sp^3d^2$
  - (c)  $sp^3d^3$
  - (d)  $sp^3$
34. The shape of  $\text{XeF}_4$  is
- (a) tetrahedral
  - (b) square planar
  - (c) pyramidal
  - (d) linear

35. Helium-oxygen mixture is used by deep sea divers in preference to nitrogen-oxygen mixture, because:

- a. Helium is much less soluble in blood than nitrogen
- b. Nitrogen is much less soluble in blood than helium
- c. Due to high pressure nitrogen reacts with oxygen to give poisonous nitric oxide
- d. Nitrogen is highly soluble in water

36. The force acting between noble gas atoms are:

This question has multiple correct options

- a. Van der Waals force
- b. Ion-dipole force
- c. Electrostatic force
- d. Magnetic force

37. Among noble gases, only xenon reacts with fluorine to form stable xenon fluorides, this is because xenon:

- a. Has the highest Ionization enthalpy
- b. Has the lowest Ionization enthalpy
- c. Has the highest heat of vaporization
- d. Is the most readily available noble gas

38. The colour discharge tubes for advertisements mainly contains:

- a. Argon
- b. Neon
- c. Helium
- d. Xenon

39. Which one of the following elements is most reactive?

- a. He
- b. Ne
- c. Ar
- d. Xe

40. The element which has not yet been reacted with  $F_2$  is:

- a. Ar
- b. Xe

- c. Kr
- d. Rn

41. Which of the following noble gas is not present in atmosphere?

- a. He
- b. Ne
- c. Kr
- d. Rn

### Assertion reason questions

Directions: These questions consist of two statements, each printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses.

- a. Assertion is correct, reason is correct; reason is a correct explanation for assertion.
- b. Assertion is correct, reason is correct; reason is not a correct explanation for assertion
- c. Assertion is correct, reason is incorrect
- d. Assertion is incorrect, reason is correct.

42. Assertion: Dinitrogen is inert at room temperature.

Reason: Dinitrogen directly combines with lithium to form ionic nitrides.

43. Assertion: When a metal is treated with conc.  $\text{HNO}_3$  it generally yields a nitrate,  $\text{NO}_2$  and  $\text{H}_2\text{O}$ .

Reason: Conc.  $\text{HNO}_3$  reacts with metal and first produces a metal nitrate and nascent hydrogen. The nascent hydrogen then further reduces  $\text{HNO}_3$  to  $\text{NO}_2$

44. Assertion: White phosphorus is more reactive than red phosphorus.

Reason: Red phosphorus consists of  $\text{P}_4$  tetrahedral units linked to one another to form linear chains.

45. Assertion: Bond angle of  $\text{H}_2\text{S}$  is smaller than  $\text{H}_2\text{O}$ .

Reason: Electronegativity of the central atom increases, bond angle decreases.

46. Assertion: Both rhombic and monoclinic sulphur exist as  $\text{S}_8$  but oxygen exists as  $\text{O}_2$ .

Reason: Oxygen forms  $p\pi - p\pi$  multiple bonds due to small size and small bond length but  $p\pi - p\pi$  bonding are not possible in sulphur.

47. Assertion: Ozone is thermodynamically stable with respect to oxygen.

Reason: Decomposition of ozone into oxygen results in the liberation of heat

48. Assertion: Inert gases are monoatomic,

Reason: Inert gases have stable configuration.

49. Assertion:  $N_2$  is less reactive than  $P_4$ .

Reason: Nitrogen has more electron gain enthalpy than phosphorus.

50. Assertion:  $HNO_3$  makes iron passive.

Reason:  $HNO_3$  forms a protective layer of ferric nitrate on the surface of iron.

51. Assertion: HI cannot be prepared by the reaction of KI with concentrated  $H_2SO_4$

Reason: HI has lowest H-X bond strength among halogen acids.

52. Assertion: NaCl reacts with concentrated  $H_2SO_4$  to give colourless fumes with pungent smell. But on adding  $MnO_2$  the fumes become greenish yellow.

Reason:  $MnO_2$  oxidises HCl to chlorine gas which is greenish yellow.

53. Assertion:  $SF_6$  cannot be hydrolysed but  $SF_4$  can be.

Reason: Six F atoms in  $SF_6$  prevent the attack of  $H_2O$  on sulphur atom of  $SF_6$ .

54. Assertion: Helium diffuses through most commonly used laboratory materials.

Reason: This gas has a very low melting point.

55. Assertion: Bismuth forms only one well characterised compound in +5 oxidation state.

Reason: Elements of group-15 form compounds in +5 oxidation state.

## 56. Case Study Question

**Read the passage given below and answer the following questions:**

Ozone is an unstable, dark blue diamagnetic gas. It absorbs the UV radiation strongly, thus protecting the people on earth from the harmful UV-radiation from the sun. The use of chlorofluorocarbon (CFC) in aerosol and refrigerator and their subsequent escape into the atmosphere, is blamed for making holes in the ozone layer over the Antarctica. Ozone acts as a strong oxidising agent in acidic and alkaline medium. For this property, ozone is used as a germicide and disinfectant for sterilizing water. It is also used in laboratory for the ozonolysis of organic compounds and in industry for the manufacture of potassium permanganate, artificial silk, etc.

- I. Which of the following statements is not correct for ozone?
  - (a) It oxidises lead sulphide
  - (b) It oxidises potassium iodide
  - (c) It oxidises mercury
  - (d) It cannot act as bleaching agent in dry state.
- II. Ozone gives carbonyl compounds with
  - (a) alkyl chloride
  - (b) alkanes
  - (c) alkenes followed by decomposition with Zn/ H<sub>2</sub>O
  - (d) alcohols followed by decomposition with Zn/H<sub>2</sub>O.
- III. Ozone reacts with moist iodine gives
  - (a) HI
  - (b) HIO<sub>3</sub>
  - (c) I<sub>2</sub>O<sub>5</sub>
  - (d) I<sub>2</sub>O<sub>4</sub>
- IV. The colour of ozone molecule is
  - (a) white
  - (b) blue
  - (c) pale green
  - (d) pale yellow

**BIOMOLECULES.**

1. During acetylation of glucose it needs, x moles of acetic anhydride. The value of x would be

- (a) 3
- (b) 5
- (c) 4
- (d) 1

2. On oxidation with a mild oxidising agent like  $\text{Br}_2/\text{H}_2\text{O}$ , the glucose is oxidized to

- (a) saccharin acid
- (b) glucaric acid
- (c) gluconic acid
- (d) valeric acid

3. Invert sugar is

- (a) a type of cane sugar
- (b) optically inactive form of sugar
- (c) mixture of glucose and galactose
- (d) mixture of glucose and fructose in equimolar quantities

4. The functional group which is found in amino acids is

- (a)  $\text{COOH}$
- (b)  $-\text{NH}_2$
- (c)  $-\text{CH}_3$
- (d) both (a) and (b).

5. Glycosidic linkage is an

- (a) amide linkage
- (b) ester linkage
- (c) ether linkage
- (d) acetyl linkage

6. Amino acids are the building blocks of

- (a) Carbohydrates
- (b) Vitamins

- (c) Fats
- (d) Proteins.

7. Which reagent is used to convert glucose into saccharic acid?

- (a)  $\text{Br}_2/\text{H}_2\text{O}$
- (b) Nitric acid
- (c) Alkaline solution of iodine
- (d) Ammonium hydroxide

8. Maltose is made up of

- (a) two  $\alpha$ -D-glucose
- (b) normal  $\beta$ -D-glucose
- (c)  $\alpha$ - and  $\beta$ -D-glucose
- (d) fructose

9. What is the basic formulae for starch?

- (a)  $(\text{C}_6\text{H}_{12}\text{O}_6)_n$
- (b)  $(\text{C}_6\text{H}_{10}\text{O}_5)_n$
- (c)  $\text{C}_{12}\text{O}_{12}\text{O}_{11}$
- (d)  $(\text{C}_6\text{H}_{12}\text{O}_4)_n$

10. Nucleic acids are polymers of:

- (a) Nucleotides
- (b) Nucleosides
- (c) Nuclei of heavy metals
- (d) Proteins

11. DNA and RNA contain four bases each. Which of the following bases is not present in RNA?

- (a) Adenine
- (b) Uracil
- (c) Thymine
- (d) Cytosine

12. Which of the following treatment will convert starch directly into glucose?

- (a) Heating with dilute  $\text{H}_2\text{SO}_4$
- (b) Fermentation by diastase
- (c) Fermentation by zymase
- (d) Heating with dilute  $\text{NaOH}$

13. Which of the following bases is not present in DNA?

- (a) Adenine
- (b) Guanine
- (c) Cytosine
- (d) Uracil

14. Proteins are found to have two different types of secondary structures:  $\alpha$  helix and  $\beta$  pleated sheet.  $\alpha$  helix structure of protein is **stabilized** by :

- (a) peptide bonds
- (b) van der Waals forces
- (c) hydrogen bonds
- (d) none of these

15. What are the hydrolysis products of sucrose?

- (a) Fructose + Fructose
- (b) Glucose + Glucose
- (c) Glucose + Galactose
- (d) D-Glucose + D-Fructose

16. Glucose does not react with:

- (a) 2,4-DNP
- (b) Schiff's reagent
- (c)  $\text{NaHSO}_3$
- (d) all of these

17. The glycosidic linkage involved in linking the glucose units in amylose part of starch is

- (a) C1-C4  $\beta$ -linkage
- (b) C4-C6  $\beta$ -linkage
- (c) C1-C6  $\alpha$ -linkage

(d) C1-C4  $\alpha$ -linkage

18. The conversion of maltose into glucose is possible by the enzyme

- (a) zymase
- (b) lactase
- (c) maltase
- (d) diastase

19. Which of the following is a non-reducing sugar?

- (a) Glucose
- (b) Sucrose
- (c) Maltose
- (d) Lactose

20. Which of the following statement is not true for glucose?

- (a) The pentaacetate of glucose does not react with hydroxylamine to give oxime
- (b) Glucose exists in two crystalline forms  $\alpha$  and  $\beta$
- (c) Glucose reacts with hydroxylamine to form oxime
- (d) Glucose gives Schiff's test for aldehyde

21. The letters D and L in carbohydrates represents:

- (a) optical rotation
- (b) mutarotation
- (c) direct synthesis
- (d) configuration

22. The anomeric carbon in D (+) glucose is

- (a) C-1 carbon
- (b) C-2 carbon
- (c) C-5 carbon
- (d) C-6 carbon

23. Which of the following most stable form of glucose?

- (a)  $\alpha$ -D-glucopyranose

- (b) B-D-glucofuranose
- (c) a-D-glucofuranose
- (d) B-D-glucofuranose

24. How many C-atoms are there in a pyranose ring?

- (a) 3
- (b) 5
- (c) 6
- (d) 7

25. The two functional groups present in a typical carbohydrate are:

- (a) -CHO and -COOH
- (b) -CO and -OH
- (c) -OH and -CHO
- (d) -OH and -COOH

26. Which of the following give a positive Fehling solution test?

- (a) sucrose
- (b) glucose
- (c) fats
- (d) protein

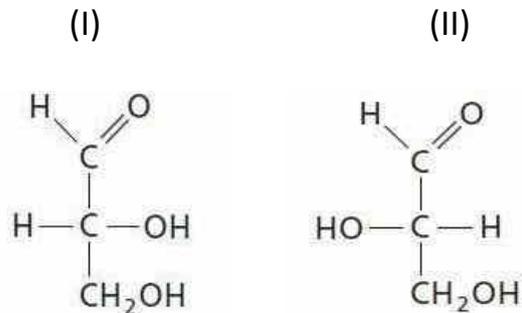
27. A diabetic person carries a packet of glucose with him always, because

- (a) glucose increases the blood sugar level slowly
- (b) glucose reduces the blood sugar level
- (c) glucose increases the blood sugar level almost instantaneously
- (d) glucose reduces the blood sugar level slowly

28. The function of glucose is to

- (a) provide energy
- (b) promote growth
- (c) prevent diseases
- (d) all the above

29. The given structure (I) and (II) represent configuration of the simplest sugar glyceraldehyde. Which of the following statements is not correct for the structures?



D-Glyceraldehyde      L-Glyceraldehyde

- (a) I represent D-form while II represents L-form of glyceraldehyde
- (b) The sugars having same configuration as D- glyceraldehyde are designated as D-sugars
- (c) Natural glucose and fructose are D-forms
- (d) D is dextrorotatory while L is laevorotatory enantiomer

30. Amino acids generally exist in the form of Zwitter ions. This means they contain

- (a) Basic – NH<sub>2</sub> group and acidic – COOH group
- (b) The basic – NH<sub>3</sub> group and acidic – COO<sup>-</sup> group
- (c) Basic -NH<sub>2</sub> and acidic – H<sup>+</sup> group
- (d) Basic – COO<sup>-</sup> group and acidic – NH<sub>3</sub> group

31. Globular proteins are present in

- (a) blood
- (b) eggs
- (c) milk
- (d) all of these

32. Which one of the amino acids can be synthesised in the body?

- (a) Alanine
- (b) Lysine
- (c) Valine
- (d) Histidine

33. Which of the following is not true about amino acids?

- (a) They are constituents of all proteins
- (b) Alanine having one amino and one carboxylic group
- (c) Most naturally occurring amino acids have D-configuration
- (d) Glycine is the only naturally occurring amino acid which is optically inactive.

34. A compound which contains both ..... and ..... is called amino acid.  
The amino acids in a polypeptide chain are joined by ...../ bonds.

- (a) amino, carboxylic group, ester
- (b) amino, carboxylic group, peptide
- (c) nitrogen, carbon, glycosidic
- (d) hydroxy, carboxylic group, peptide

35. Denaturation of protein leads to loss of its biological activity by

- (a) formation of amino acids
- (b) loss of primary structure
- (c) loss of both primary and secondary structure
- (d) loss of both secondary and tertiary structures

36. Proteins are condensation polymers of

- (a)  $\alpha$ -amino acids
- (b)  $\beta$ -amino acids
- (c)  $\alpha$ -hydroxy acids
- (d)  $\beta$ -hydroxy acids

37. Mark the wrong statement about denaturation of proteins

- (a) The primary structure of the protein does not change
- (b) Globular proteins are converted into fibrous proteins
- (c) Fibrous proteins are converted into globular proteins
- (d) The biological activity of the protein is destroyed

38. In fibrous proteins, polypeptide chains are held together

- (a) van der Waal's forces
- (b) electrostatic forces of attraction
- (c) hydrogen bonds
- (d) covalent bonds

39. Which type of interactions are responsible for making the  $\alpha$ -helix structure stable?

- (a) Peptide bonds between  $-\text{NH}_2$  and  $-\text{CO}$  groups of adjacent carbon chain
- (b) Hydrogen bonds between  $-\text{NH}$  of amino acid in the one turn with  $-\text{CO}$  of amino acid to adjacent turn
- (c)  $-\text{OH}$  group of one amino acid with  $-\text{CO}$  group of other amino acid on the turn
- (d) Hydrogen bonds between adjacent amino acids

40. Secondary structure of protein refers to

- (a) sequence of amino acids in polypeptide chain
- (b) bonds between alternate polypeptide chains
- (c) folding patterns of polypeptide chain
- (d) bonding between  $\text{NH}_3^+$  and  $\text{COO}^-$  of two peptides

### Assertion and Reason Type Questions

Directions: These questions consist of two statements, each printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses.

- (a) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
- (b) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
- (c) If the Assertion is correct but Reason is incorrect.
- (d) If both the Assertion and Reason are incorrect.

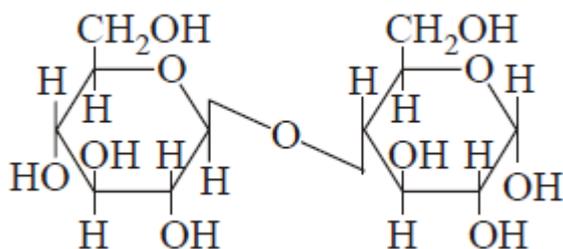
41. Assertion : D(+)- Glucose is dextrorotatory in nature.

Reason : 'D' represents its dextrorotatory nature.

42. Assertion : Sucrose is called an invert sugar.

Reason : On hydrolysis, sucrose brings the change in the sign of rotation from dextro (+) to laevo(-).

43. Assertion :  $\beta$ -glycosidic linkage is present in maltose



Reason : Maltose is composed of two glucose units in which C-1 of one glucose unit is linked to C-4 of another glucose unit.

44. Assertion : At isoelectric point, the amino group does not migrate under the influence of electric field.

Reason : At isoelectric point, amino acid exists as a zwitterion.

45. Assertion : Vitamin D cannot be stored in our body

Reason : Vitamin D is fat soluble vitamin and is excreted from the body in urine

46 Assertion: Deoxyribose  $C_5H_{10}O_4$  is not a carbohydrate.

Reason: Carbohydrates are hydrates of carbon so, compounds which follow  $C_x(H_2O)_y$  formula are carbohydrates.

47Assertion: Glucose reacts with hydroxylamine to form an oxime and also adds a molecule of hydrogen cyanide to give cyanohydrin.

Reason: The carbonyl group is present in the open chain structure of glucose.

48.assertion: The two strands in double strand helix structure of DNA are complementary to each other.

Reason: Disulphide bonds are formed between specific pairs of bases

49.Match the vitamins given in Column I with the deficiency disease they cause given in Column II.

<i>Column I (Vitamins)</i>	<i>Column II (Diseases)</i>
A. Vitamin A	Xerophthalmia Night blindness
B. Vitamin B <sub>1</sub>	Beri beri
C. Vitamin B <sub>12</sub>	Pernicious anaemia
D. Vitamin C	Bleeding gums
E. Vitamin D	Rickets Osteomalacia
F. Vitamin E	Muscular weakness
G. Vitamin K	Increased blood clotting time

50. Match the following enzyme given in Column I with the reactions they catalyse given in Column II.

Column I	Column II
i. Invertase	a. Decomposition of urea into $NH_3$ and $CO_2$
ii. Maltase	b. Conversion of glucose into ethyl alcohol
iii. Pepsin	c. Hydrolysis of maltase into glucose
iv. Urease	d. Hydrolysis of cane sugar
v. Zymase	e. Hydrolysis of proteins of peptides

51. Read the passage given below and answer the following questions:

When a protein in its native form, is subjected to physical changes like change in temperature or chemical changes like change in pH, the hydrogen bonds are disturbed. Due to this, globules unfold and helix gets uncoiled and protein loses its biological activity. This is called denaturation of protein.

The denaturation causes change in secondary and tertiary structures but primary structures remains intact.

Examples of denaturation of protein are coagulation of egg white on boiling, curding of milk, formation of cheese when an acid is added to milk.

Answer the following-

(i) Mark the wrong statement about denaturation of proteins.

- (a) The primary structure of the protein does not change.
- (b) Globular proteins are converted into fibrous proteins.
- (c) Fibrous proteins are converted into globular proteins.
- (d) The biological activity of the protein is destroyed.

(ii) Which statement(s) of protein remain(s) intact during denaturation process?

- (a) Both secondary and tertiary structures
- (b) primary structure only
- (c) secondary structure only
- (d) tertiary structure

(iii)  $\alpha$ -helix and  $\beta$ -pleated structures of proteins are classified as

- (a) primary structure
- (b) secondary structures
- (c) tertiary structure
- (d) quaternary structure

(iv) Cheese is a

- (a) globular protein
- (b) conjugated protein
- (c) denatured protein
- (d) derived protein

(v) Secondary structure of protein refers to v

- (a) mainly denatured of proteins and structures of prosthetic groups
- (b) three-dimensional structure, especially the bond between amino acid residues that are distant from each other in the polypeptide chain
- (c) linear sequence of amino acid residues in the polypeptide chain
- (d) regular folding patterns of continuous portions of the polypeptide chain.

