DF-3032
B. Sc. (Bioscience) (Sem. III) Examination
March / April – 2016
301 : Biochemistry

Time : 2 Hours] [Total Marks : 50

Instructions :

(1) Fill up strictly the details of signs on your answer book.

(2) There are total-50 multiple choice questions (MCQ) in question paper.
(3) All questions are compulsory.
(4) Select the best one from given options to give an answer.
(5) Answer the questions only into the OMR answer-sheet which is given to you.

O.M.R. Sheet भरवा अंगेनी अत्यन्ती सुविधानी आपेक्ष नाही.
O.M.R. शीतली पावण भरवे नाही.
Important instructions to fillup O.M.R. Sheet
is given back side of provided O.M.R. Sheet.
1. The general formula of monosaccharides is
   (A) $C_nH_{2n}O_n$
   (B) $C_{2n}H_{2n}O_n$
   (C) $C_nH_{2n}O_{2n}$
   (D) $C_nH_{2n}O_{2n}$

2. The aldose sugar is
   (A) Glycerose
   (B) Ribulose
   (C) Erythulose
   (D) Dihydoxyacetone

3. Polysaccharides are
   (A) Polymers
   (B) Acids
   (C) Proteins
   (D) Oils

4. Which of the following is a non-reducing sugar?
   (A) Isomaltose
   (B) Maltose
   (C) Lactose
   (D) Trehalose

5. Mutarotation refers to change in
   (A) pH
   (B) Optical rotation
   (C) Conductance
   (D) Chemical properties

6. The sugar found in milk is
   (A) Galactose
   (B) Glucose
   (C) Fructose
   (D) Lactose

7. Sucrose consists of
   (A) Glucose + glucose
   (B) Glucose + fructose
   (C) Glucose + galactose
   (D) Glucose + mannose

8. A positive Benedict's test is not given by
   (A) Sucrose
   (B) Lactose
   (C) Maltose
   (D) Glucose

9. Osazones are not formed with the
   (A) Glucose
   (B) Fructose
   (C) Sucrose
   (D) Lactose

10. A carbohydrate, commonly known as dextrose is
    (A) Dextrin
    (B) D-Fructose
    (C) D-Glucose
    (D) Glycogen
11 Which of the following is an epimeric pair?
   (A) Glucose and fructose
   (B) Glucose and galactose
   (C) Galactose and mannose
   (D) Lactose and maltose

12 Mucopolysaccharides are
   (A) Homopolysaccharides
   (B) Heteropolysaccharides
   (C) Proteins
   (D) Amino acids

13 All proteins contain the
   (A) Same 20 amino acids
   (B) Different amino acids
   (C) 300 Amino acids occurring in nature
   (D) Only a few amino acids

14 Sulphur containing amino acid is
   (A) Methionine
   (B) Leucine
   (C) Valine
   (D) Asparagine

15 Mother of a malnourished child has been instructed to include a complete protein in diet for her child, which out of the followings proteins should be recommended?
   (A) Pulses
   (B) Wheat
   (C) Soy Protein
   (D) Milk

16 Which out of the followings is not a fibrous protein?
   (A) Carbonic anhydrase
   (B) Collagen
   (C) Fibrinogen
   (D) Keratin

17 Which of the following is not an aromatic amino acid?
   (A) Serine
   (B) Phenylalanine
   (C) Tryptophan
   (D) Tyrosine

18 Which of the following amino acid is polar?
   (A) Valine
   (B) Histidine
   (C) Leucine
   (D) Isoleucine

19 Which of the following is not a type of protein secondary structure?
   (A) β-pleated sheet
   (B) α-helix
   (C) Third level folding to form small globules
   (D) Turns

20 α-helix has
   (A) 3.4 amino acid residues/turn
   (B) 3.6 amino acid residues/turn
   (C) 3.8 amino acid residues/turn
   (D) 3.0 amino acid residues/turn
21 Tertiary structure is maintained by
   (A) Peptide bond
   (B) Hydrogen bond
   (C) Di-sulphide bond
   (D) All of these

22 Denaturation of proteins results in
   (A) Disruption of primary structure
   (B) Breakdown of peptide bonds
   (C) Destruction of hydrogen bonds
   (D) Irreversible changes in the molecule

23 Which of the following is not an amino acid?
   (A) Glutamic acid
   (B) Aspartic acid
   (C) Glutamine
   (D) Palmitic acid

24 At neutral pH, a mixture of amino acids in solution would be predominantly:
   (A) Dipolar ions
   (B) Nonpolar molecules
   (C) Positive and monovalent
   (D) Hydrophobic

25 An aromatic amino acid is
   (A) Lysine    (B) Tyrosine
   (C) Taurine   (D) Arginine

26 Non essential amino acids
   (A) Are not components of tissue proteins
   (B) May be synthesized in the body from essential amino acids
   (C) Have no role in the metabolism
   (D) May be synthesized in the body in diseased states

27 An example of scleroprotein is
   (A) Zein
   (B) Keratin
   (C) Glutenin
   (D) Ovoglobulin

28 Proteins are soluble in
   (A) Anhydrous acetone
   (B) Aqueous alcohol
   (C) Anhydrous alcohol
   (D) Benzene

29 Tertiary structure of a protein describes
   (A) The order of amino acids
   (B) Location of disulphide bonds
   (C) Loop regions of proteins
   (D) The ways of protein folding

30 Protein + prosthetic group = __________.
   (A) Simple protein
   (B) Conjugated protein
   (C) Globular protein
   (D) Fibrous protein
31 Which the following is the word regarding steroids is not correct?
(A) Cortisone
(B) Progesterone
(C) Glycolipid
(D) Ergosterol

32 Which of the following statement regarding to properties of starch is not correct?
(A) Present of amylose and amylopectin chains.
(B) Stored food in plants.
(C) Soluble in water.
(D) Not sweet.

33 Which one of the following pairs is not correctly matched?
(A) Triose sugar-Glyceraldehydes-Aldo sugar.
(B) Pentose sugar-Ribulose-Keto sugar.
(C) Hexose sugar-Fructose-Aldo sugar.
(D) Triose sugar-Dihydroxy acetone-Keto sugar.

34 Which the following pair regarding to biological importance of carbohydrates is not correctly matched?
(A) Cellulose-Forms the plant cell wall.
(B) Glycogen-Reserve food in animals.
(C) Ribose sugar-Structural components of ATP.
(D) Glucose-The most widely used in respiration.

35 Which the following regarding to examples of Keto sugar is not correctly?
(A) Fructose
(B) Ribulose
(C) Ribose sugar
(D) Dihydroxy acetone
36 Which of the following pairs is not correctly matched?

(A) Butter – Glycerol + 3 Fatty acids.
(B) Glycolipid – Glycerol + Lipid.
(C) Waxes – Monohydroxy alcohol + 1 Fatty acid.
(D) Cortisone – Present of –COOH or keto group

37 Which of the following option is not correctly for glucose molecule?

(A) It is Keto hexoses sugar.
(B) Hydrolysis of a molecule of maltose
(C) It can pass through the cell membranе
(D) Found in the juice of fruits.

38 Which one of the following pairs is not correctly matched?

(A) Galactose – Lactose
(B) Fructose – Glucose
(C) Fructose – Galactose
(D) Ribose – Deoxyribose.

39 Which one of the following pairs is not correctly matched?

(A) Triose sugar – DHAP.
(B) Starch – amylase and amylopectin.
(C) Phospholipid – plasma membranе.
(D) Cortisone – sterols.

40 Which one of the following pairs is correctly matched?

(A) Fats -Long saturated Fatty acids chain.
(B) Derivatives of Lipid -Vitamins A, D, E.
(C) Deoxyribose -RNA.
(D) Glycogen -Forms the plant cell wall.
41 Lipids are relatively insoluble in...
(A) Chloroform
(B) Water
(C) Benzene
(D) Ether

42 Which of the following statement regarding the Fatty acid is not correct?
(A) Unsaturated fatty acids are two successive carbon atoms at certain places therein are linked by a double bond.
(B) Saturated fatty acids are capable of accepting hydrogen or halogen atoms.
(C) Butyric acid and palmitic acids are Saturated fatty acids
(D) Crotonic acid and oleic acid are Unsaturated fatty acids.

43 Which of the following statement regarding to Lipid is not correct ?
(A) Lipids are of three types i Simple ii Complex iii Steroids
(B) The lipids are a heterogenous group of compounds related to Fatty acids.
(C) Lipids are the important constituents of the diet because of their high energy value.
(D) Lipids are formed of C, H and O atoms, The number of H atom is less than that of O.

44 Which of the following statement regarding to Amylase is not correct ?
(A) Unbranched polysaccharide chains made up of glucose units.
(B) Amylase occur in the constitution of glycogen.
(C) Amylase occur in more amount in starch.
(D) None of these

45 Which of the following options suggest number of carbons in descending order?

<table>
<thead>
<tr>
<th></th>
<th>P Fructose</th>
<th>Q Palmitic acid</th>
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<tbody>
<tr>
<td>R</td>
<td>Ribulose</td>
<td>S Oleic acid</td>
</tr>
</tbody>
</table>

(A) R- P - Q - S
(B) R-P- Q - S
(C) S - Q - P-R
(D) S -P - Q -R

46 In the formation of triglyceride, glycerol get linked with any Fatty acids by.

(A) –NH₂
(B) –COOH
(C) –CHO
(D) >C=O
47 Which of the following is an aldose sugar?
(A) Glucose
(B) Galactose
(C) both Glucose and Galactose
(D) None of these

48 Which of the following structure show the types of sugar?
\[
\begin{align*}
 &\text{CH}_2\text{OH} \\
 &| \\
 &\text{C}=\text{O} \\
 &| \\
 &\text{H} \text{ C} \text{ OH} \\
 &| \\
 &\text{H} \text{ C} \text{ OH} \\
 &| \\
 &\text{CH}_2\text{OH}
\end{align*}
\]
(A) Aldo triose sugar
(B) Aldo pentose sugar
(C) Keto triose sugar
(D) Keto pentose sugar

49 Which molecules are the consist of a following molecule structure?
\[
\begin{align*}
 &\text{H}_2\text{C} \text{ O} \text{ O.C R}_1 \\
 &| \\
 &\text{H} \text{C} \text{ O} \text{ O.C R}_2 \\
 &| \\
 &\text{H}_2\text{C} \text{ O} \text{ O.C R}_3
\end{align*}
\]
(A) 3 glycerol + 1 fatty acid
(B) 1 glycerol + 3 fatty acid
(C) 3 glycerol + 3 fatty acid
(D) glycerol + fatty acid

50 Which of the following the general formula of Carbohydrate?
(A) \(\text{C}_n(\text{H}_2\text{O})_m\)
(B) \(\text{C}_n(\text{H}_2\text{O})_{n-1}\)
(C) \((\text{C}_6\text{H}_1\text{O}_5)_n\)
(D) None of these