Exercise-1

Marked Questions are for Revision Questions.

ONLY ONE OPTION CORRECT TYPE

SECTION - A # CARBOHYDRATES

1. Which is a disaccharide?
(1) Galactose (2) Fructose (3) Maltose (4) Dextrin

2. Which substance is not carbohydrate?
(1) Starch (2) Glycogen (3) Wax (4) Glucose

3. To get quick energy one should use
(1) Carbohydrate (2) Fats (3) Vitamins (4) Proteins

4. Monosaccharide is
(1) Pentose Sugar (2) Hexose Sugar (3) Glucose (4) All of these

5. Sugar which is found in haemolymph of insects is called-
(1) Maltose (2) Lactose (3) Trehalose (4) Galactose

6. Starving person will first use from the following-
(1) Fats (2) Glycogen (3) Blood protein (4) Muscle protein

7. Which of the following sugar is found in ATP?
(1) Deoxyribose (2) Ribose (3) Trehalose (4) Glucose

8. Lactose is composed of -
(1) Glucose + galactose (2) Glucose + Fructose
(3) Glucose + Glucose (4) Glucose + mannose

9. True statements for cellulose molecule-
(1) β-1-4linkage, unbranched (2) β-1-4linkage, branched
(3) α-1-4 linkage, branched. (4) β-1-6linkage, unbranched

10. Sweetest sugar among the naturally occuring sugar-
(1) Glucose (2) Fructose (3) Sucrose (4) Saccharine

11. Which sugar occur only in mammals?
(1) Trehalose (2) Galactose (3) Lactose (4) Mannose

12. Amylose and Amylopectin occur in -
(1) Glycogen (2) Starch (3) Cellulose (4) Chitin

13. Animal starch (glycogen) differs from plant starch in-
(1) Having short chain branched structure (2) Being reserve food of animals mostly
(3) Give no blue colour with iodine (4) All of the above

14. The basic unit of chitin is-

(1) N-acetyl glucosamine (2) Glucose
(3) Galactose (4) Fructose

15. The formation of glucose from non-carbohydrate materials is called-
(1) Glycogenesis (2) Glycogenolysis
(3) Gluconeogenesis (4) Glycolysis

SECTION - B # PROTEINS

1. Which element is normally absent in proteins?
(1) C (2) N (3) S (4) P

2. Protein most abudant in human body is
(1) Collagen (2) Myosin (3) Actin (4) Albumin

3. Proteins which are present in protoplasm are very important because -
(1) They provide rigidity to cell (2) They function as biocatalyst
(3) They yield energy (4) They are stored food

4. Products of proteins catabolism -
(1) NH_3, CO_2 and Urea (2) Urea, CO_2 and NH
(3) Urea, NH_3 and uric acid (4) Urea, NH_3, alanine and creatine

5. Unit of proteins which unite in long chains to form proteins are called -
(1) Sugar (2) Purines (3) Pyrimidines (4) Amino acids

6. Milk protein is -
(1) Lactogen (2) Myosin (3) Casein (4) Pepsin

7. The simplest amino acid is-
(1) Tyrosine (2) Lysine (3) Glycine (4) Aspartic acid

8. The amino acids which are not synthesized in the body are called -
(1) Non-essential (2) Essential (3) Deaminated (4) All of them

9. Which of the following will be different in different animals?
(1) Fats (2) Carbohydrates (3) Proteins (4) Vitamins

10. In India the best source for proteins in vegetarian persons is-
(1) Pulses (2) Potato (3) Egg (4) Meat

11. Proteins are absorbed in the body of a person as -
(1) Amino acids (2) Natural proteins (3) Enzymes (4) Nucleic acid

12. The formation of protein can be considered as-
(1) Dehydration synthesis (2) Dehydration analysis
(3) Hydration synthesis (4) Hydration analysis

13. Which of the following amino acid is essential?
(1) Alanine (2) Glycine (3) Tryptophan (4) Tyrosine

14. Which is most important structural part of the body?
(1) Protein (2) Carbohydrates

(3) Lipid (4) Nucleic acid

15. Histone is a basic protein due to
(1) Alanine & Glycine (2) Methionine & serine
(3) Tryptophan & tyrosine (4) Lysine & Arginine

16. Which of the following is sulphur containing amino acid?
(1) Alanine (2) Lysine (3) Methionine (4) Argenine

17. Following are Aromatic amino acids
(1) Glycine, Valine, Alanine
(2) Phenylalanine, Tyrosine, Tryoptophan
(3) Cysten, Methionine, Glutamic acid
(4) Threonine, Leucine, Argenine

SECTION - C # LIPIDS

1. Lecithin is chemically
(1) Phosphatidyl choline (2) Phosphatidyl ethanolamine
(3) Phosphatidyl serine (4) Phosphatidyl sphingosin

2. Cholesterol is an important compound in the body, because, It
(1) regulates blood pressure
(2) gives rise to steroid hormones
(3) regulates filtration pressure in kidneys
(4) is involved in Ca^{++} absorption from gut

3. Which of the following lipids is most abundant in cell membrane?
(1) Steroid (2) Cholesterol (3) Phospholipid (4) Cutin

4. Esters of long chain fatty acid with long-chain monohydric alcohols are called-
(1) Fats (2) Waxes (3) Both (1) and (2) (4) None of these

5. The density of lipoproteins increases as the protein content
(1) decreases (2) increases
(3) not related with the protein content (4) none of these

6. The majority of the absorbed fat appears in the form of
(1) HDL (2) LDL (3) VLDL (4) Chylomicrons

7. Human system lacks the enzymes capable of synthesizing
(1) Oleic acid (2) Archidonic acid
(3) Linolenic acid (4) Linoleic, linolenic acid and arachidonic acid

8. Which of the following bond formed by dehydration?
(1) Peptide bond & hydrogen bond (2) Peptide bond & glycosidic bond
(3) Glycosidic bond (4) All of these

9. Which of the following is wrong about protein?
(1) Protein is a polymer of amino acids, which are joined by peptide bond.

(2) A protein is imagined as a line, the left end represented by the first amino acid and right end represented by last amino acid

(3) The first amino acid is called as N-terminal amino acid while last amino acid is called as C-terminal amino acid

(4) Protein is a homo-polymer.

10. Which of the following statement is correct about amino acid?

(1) These are substituted methanes.

(2) In these amino ($–NH_2$) and carboxyl (–COOH) group are of ionisable nature.

(3) Based on the nature of R-group there are many amino acids

(4) All of the above correct

MISCELLANEOUS QUESTIONS

1. Two elements needed for building healthy teeth and bones are

(1) iron and calcium (2) phosphorous and iron

(3) calcium and phosphorous (4) CO_2 and H_2O

2. If all the peptide bonds of protein are broken, then the remaining part is

(1) amide (2) oligosaccharide (3) polypeptide (4) amino acid

3. Arachidonic acid is

(1) Non-essential fatty acid (2) Essential fatty acid

(3) Polyunsaturated fatty acid (4) Both (2) and (3)

4. Which of the following are the characteristics of plants?

(1) Glucose and cellulose (2) Pyruvic acid and glucose

(3) Cellulose and starch (4) Starch and pyruvic acid

5. In protoplasm fat store is in the form of-

(1) Polypeptide (2) Triglyceride (3) Polysaccharide (4) Nucleosides

6. Antibody is formed by

(1) Protein (2) Carbohydrate (3) Nucleic acid (4) Lipid

7. Major cause of anaemia is–

(1) Deficiency of Ca (2) Deficiency of Fe

(3) Deficiency of Na (4) Deficiency of Mg

8. Maltose consists of which one of the following

(1) β - glucose and β - galactose (2) α - glucose and α - fructose

(3) α - sucrose nad β - glucose (4) α -Glucose and α -glucose

9. Which of the following structure is not common in all proteins?

(1) Primary structure (2) Secondary structure

(3) Tertiary structure (4) Quarternary structure

10. Match the items in column I with items in column II and choose the correct answer

Column I		Column II	
A	Triglyceride	1	Animal hormones
B	Membrane lipid	2	Feathers and leaves
C	Steroid	3	Phospolipids
D	Wax	4	Fat stored in form of droplets

(1) A - 4, B - 3, C - 1, D - 2
(2) A - 2, B - 3, C - 4, D - 1
(3) A - 3, B - 4, C - 1, D - 2
(4) A - 4, B - 1, C - 2, D - 3

11. Which of the following fats is least harmful for heart?
(1) Saturated fat
(2) Cholesterol
(3) Polyunsaturated fat
(4) Ghee

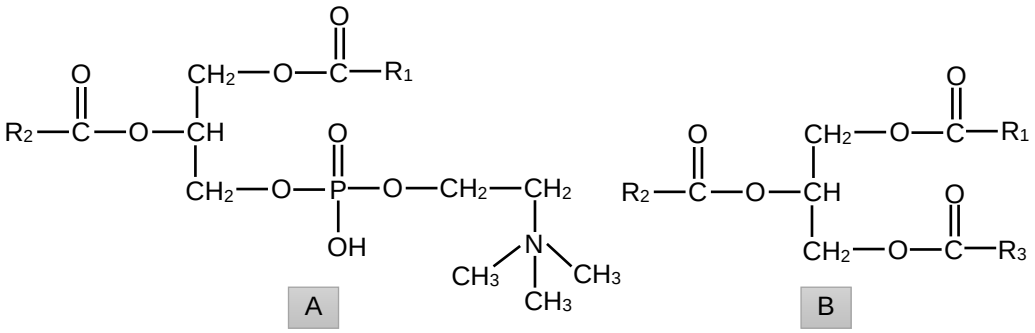
12. Quarternary structure of protein
(1) Consists of four subunits
(2) May be either α or β
(3) Is unrelated to function of the protein
(4) Is dictated by the primary structures of the individual subunits

13. Starch is polymer of
(1) Glucose (2) Sucrose (3) Maltose (4) Fructose

14. Table sugar is
(1) Sucrose (2) Glucose (3) Fructose (4) Lactose

15. Protein which plays a significant role in ageing is
(1) Collagen (2) Elastin (3) Actin (4) Myosin

16. The figure shows structure of two lipids A and B. Identify these



(1) A-triglyceride, B-phospholipid
(2) A-lecithin, B-triglyceride
(3) A-cholesterol, B-glycerol
(4) A-diglyceride, B-monoglyceride

Exercise-2

1. Any lens cleaning fluid essentially contains **(FIBNO)**

(1) lipase (2) protease

(3) cellulose (4) mild detergent

2. Cholesterol **(4th ABO)**

(1) plays an important role in controlling the fluidity of cell membranes

(2) holds membrane bound proteins within the lipid bilayer

(3) often has a role as a hormone receptor on the surface of membranes

(4) is a water soluble molecule found in both prokaryotes and eukaryotes

3. A cell membrane contains 60% protein (density 1.33) and 40% phospholipid (density 0.93). When the membrane is centrifuged in NaCl solution of density 1.03 gm/cm3, it will: **(1st NSEB)**

(1) float (2) sediment

(3) layer in the centre of the NaCl column (4) fragments in the NaCl columns

4. Molecules resulting from the hydrolysis of a dipeptide are **(8th CBO)**

(1) two sugars (2) an amino acid and an alcohol

(3) an acid and an amine (4) two amino acids

5. Water is the most abundant substance in all organisms. Next to water, the major components of living cell are **(9th CBO)**

(1) lipids (2) vitamins

(3) carybohydrates (4) proteins

6. The bonding of two amino acid molecules to form a larger molecule requires: **(5th CBO)**

(1) the release of a water molecule (2) the release of a carbon dioxide molecule

(3) the addition of a water molecule (4) an increase in activation energy

7. Fats provide more energy than carbohydrates because - **[KVPY 2007 SB]**

(1) Fats contain higher percentage of C and H and lower percentage of O than carbohydrates

(2) Fats gets readily oxidized than carbohydrates

(3) Fats contain higher percentage of O than C

(4) Fats can be absorbed readily by our bodies than carbohydrates

8. The effect of consumption of excess protein by normal individuals would result in **[KVPY 2009 SB]**

(1) excretion of excess protein in urine

(2) increase in the amount of adipose tissue

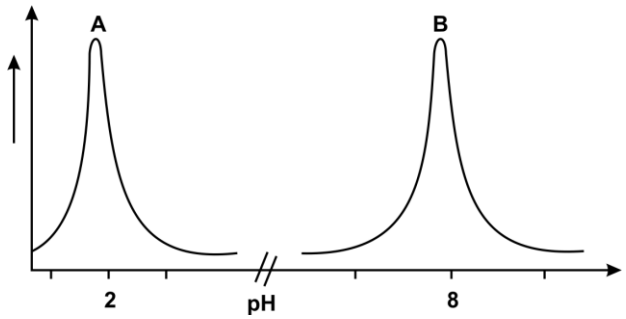
(3) increase in the synthesis of muscle protein

(4) increase in the circulatory plasma proteins

9. Hydrogen bonding plays an important structural and functional role in **(2nd NSEB)**

(1) DNA (2) Water (3) proteins (4) all of these

10.# A and B in the given graph are the action spectra of the two enzymes. The two enzymes are **(2nd NSEB)**



(1) A : amylase B : trypsin
(2) A: pepsin B : trypsin
(3) A: chymotrypsin B : Renin
(4) A: lactate dhydrogenase B : amylase

Exercise-3

PART - I NEET / AIPMT QUESTION (PREVIOUS YEARS)

1. Conjugated proteins containing carbohydrates as prosthetic group are known as **(AIPMT-2000)**
(1) Chromoproteins (2) Glycoproteins (3) Lipoproteins (4) Nucleoproteins

2. Which is an essential amino acid? **(AIPMT-2000)**
(1) Serine (2) Aspartic acid (3) Glycine (4) Phenylalanine

3. Most abundant organic compound on earth is **(AIPMT 2001, 2004)**
(1) Protein (2) Cellulose (3) Lipids (4) Steroids

4. Spoilage of oil can be detected by which fatty acid **(AIPMT-2001)**
(1) Oleic acid (2) Linolenic acid (3) Linoleic acid (4) Erucic acid

5. Collagen is **(AIPMT-2002)**
(1) Fibrous protein (2) Globular protein (3) Lipid (4) Carbohydrate

6. Lipids are insoluble in water because lipid molecules are **(AIPMT-2002)**
(1) Hydrophilic (2) Hydrophobic (3) Neutral (4) Zwitter ions

7. Which of the following is a reducing sugar? **(AIPMT-2002)**
(1) Galactose (2) Gluconic acid
(3) β-methyl galactoside (4) Sucrose

8. If DNA percentage of thymine is 20.What is the percentage of guanine? **(AIPMT-2002)**
(1) 20% (2) 40% (3) 30% (4) 60%

9. The major portion of the dry weight of plants comprises of **(AIPMT-2003)**
(1) Carbon, nitrogen and hydrogen (2) Carbon, hydrogen and oxygen
(3) Nitrogen, phosphorus and potassium (4) Calcium, magnesium and sulphur

10. Which of the following is the simplest amino acid? **(AIPMT-2005)**
(1) Alanine (2) Asparagine (3) Glycine (4) Tyrosine

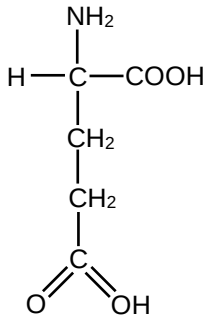
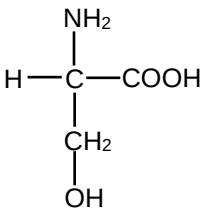
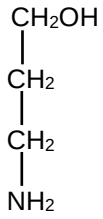
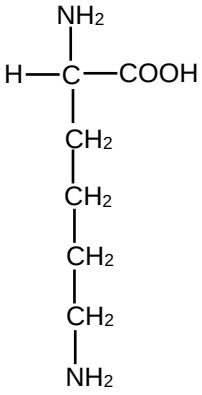
11. Antibodies in our body are complex **(AIPMT-2006)**

(1) Steroids (2) prostaglandins (3) Glycoproteins (4) Lipoproteins

12. About 98 percent of the mass of every living organism is composed of just six elements including carbon, hydrogen, nitrogen, oxygen and **(AIPMT-2007)**
(1) phosphorus and sulphur (2) sulphur and magnesium
(3) magnesium and sodium (4) calcium and phosphorus

13. Which one of the following is not a constituent of cell membrane **(AIPMT-2008)**
(1) Cholesterol (2) Glycolipids (3) Proline (4) Phospholipids

14.# Which one out of A – D given below correctly respresents the structural formula of the basic amino acid?

A	B	C	D
			

(1) C (2) D (3) A (4) B **(AIPMT Pre. 2012)**

15. Which one of the following is a non-reducing carbohydrate? **(AIPMT-2014)**
(1) Maltose (2) Sucrose (3) Lactose (4) Ribose 5-phosphate

16. One of the major components of cell wall of most fungi is: **(NEET-1 - 2016)**
(1) Hemicelluloses (2) Chitin (3) Peptidoglycan (4) Cellulose

17. A typical fat molecule is made up of : **(NEET-1 - 2016)**
(1) Three glycerol and three fatty acid molecules
(2) Three glycerol molecules and one fatty acid molecule
(3) One glycerol and three fatty acid molecules
(4) One glycerol and one fatty acid molecule

18. Which one of the following statements is wrong? **(NEET-1 - 2016)**
(1) Glycine is a sulphur containing amino acid. (2) Sucrose is a disaccharide.
(3) Cellulose is a polysaccharide. (4) Uracil is a pyrimidine.

19. Which of the following is the least likely to be involved in stabilizing the three-dimensional folding of most proteins? **(NEET-2-2016)**
(1) Ester bonds (2) Hydrogen bonds
(3) Electrostatic interaction (4) Hydrophobic interaction

20. The two functional groups characteristic of sugars are- **(NEET-2018)**
(1) hydroxyl and methyl (2) carbonyl and hydroxyl
(3) carbonyl and phosphate (4) carbonyl and methyl

21. Which of the following glucose transporters insulin-dependent? **(NEET-1-2019)**
(1) GLUT IV (2) GLUT I (3) GLUT II (4) GLUT III

22. Which of the following organic compounds is the main constituent of Lecithin? **(NEET-2-2019)**
(1) Arachidonic acid (2) Phospholipid (3) Cholesterol (4) Phosphoprotein

PART - II AIIMS QUESTION (PREVIOUS YEARS)

1. Cellulose, the most important constituent of plant cell wall is made of **(AIIMS-2007)**

(1) Unbranched chain of glucose molecules linked by α 1, 4 glycosidic bond

(2) Branched chain of glucose molecules linked by β 1, 4 glycosidic bond in straight chain and α 1, 6 glycosidic bond at the site of branching

(3) Unbranched chain of glucose molecules linked by β 1, 4 glycosidic bond

(4) Branched chain of glucose molecules linked by α 1, 6 glycosidic bond at the site of branching

2. Jute fibres deteriorate quickly because **(AIIMS-2009)**

(1) cellulose content is high (2) lignin content is high

(3) cellulose content is low (4) lignin content is low

3. Which of the following sugars is not found in plants? **(AIIMS-2009)**

(1) sucrose (2) glucose (3) lactose (4) fructose

4. Cotton fibres mainly contains **(AIIMS-2009)**

(1) cellulose (2) glycogen (3) protein (4) lipid

5. How many polypeptide chains are there in 1 Hb molecule? **(AIIMS-I-2018)**

(1) 2 α & 2 β (2) 4 α (3) 4 β (4) 1 α & 3 β

6. Which of the following is incorrect? **(AIIMS-I-2018)**

(1) Fructose is reducing sugar (2) Cellulose has β-D Glucose units

(3) DNA has D-ribose (4) Amylopectin is insoluble in water

7. Examples of essential amino acids are – **(AIIMS-III-2018)**

(1) Lys, Gly, Trp, Val (2) His, Val, Lys, Trp (3) Phe, Glu, Met, Ala (4) Ala, Arg, Asn, Pro

8. Select the correct one – **(AIIMS-III-2018)**

(1) Beer produced by distillation of fermented broth

(2) Bottled juices are cleared by protease and pectinase

(3) Methanogens digest cellulose aerobically

(4) Streptokinase is used to lower the blood cholesterol

Answers

EXERCISE - 1

SECTION - A

1.	(3)	**2.**	(3)	**3.**	(1)	**4.**	(4)	**5.**	(3)	**6.**	(2)	**7.**	(2)
8.	(1)	**9.**	(1)	**10.**	(2)	**11.**	(3)	**12.**	(2)	**13.**	(4)	**14.**	(1)
15.	(3)												

SECTION - B

1.	(4)	**2.**	(1)	**3.**	(2)	**4.**	(1)	**5.**	(4)	**6.**	(3)	**7.**	(3)
8.	(2)	**9.**	(3)	**10.**	(1)	**11.**	(1)	**12.**	(1)	**13.**	(3)	**14.**	(1)
15.	(4)	**16.**	(3)	**17.**	(2)								

SECTION - C

1.	(1)	**2.**	(2)	**3.**	(3)	**4.**	(2)	**5.**	(2)	**6.**	(4)	**7.**	(4)
8.	(2)	**9.**	(4)	**10.**	(4)								

Miscellaneous Questions

1.	(3)	**2.**	(4)	**3.**	(4)	**4.**	(3)	**5.**	(2)	**6.**	(1)	**7.**	(2)
8.	(4)	**9.**	(4)	**10.**	(1)	**11.**	(3)	**12.**	(4)	**13.**	(1)	**14.**	(1)
15.	(1)	**16.**	(2)										

EXERCISE - 2

1.	(1)	**2.**	(1)	**3.**	(2)	**4.**	(4)	**5.**	(4)	**6.**	(1)	**7.**	(1)
8.	(2)	**9.**	(4)	**10.**	(2)								

EXERCISE - 3

PART- I

1.	(2)	**2.**	(4)	**3.**	(2)	**4.**	(4)	**5.**	(1)	**6.**	(2)	**7.**	(1)
8.	(3)	**9.**	(2)	**10.**	(3)	**11.**	(3)	**12.**	(1)	**13.**	(3)	**14.**	(2)
15.	(2)	**16.**	(2)	**17.**	(3)	**18.**	(1)	**19.**	(1)	**20.**	(2)		
21.	(1)	**22.**	(2)										

PART- II

1.	(3)	**2.**	(1)	**3.**	(3)	**4.**	(1)	**5.**	(1)	**6.**	(3)	**7.**	(2)
8.	(2)												