

## NEET : CHAPTER WISE TEST- 8

**SUBJECT :- BIOLOGY**

**CLASS :- 11<sup>th</sup>**

**CHAPTER :- BIOMOLECULES**

**DATE.....**

**NAME.....**

**SECTION.....**

### (SECTION-A)

1. Mark the incorrect set with respect to secondary metabolites.  
(A) Abrin, ricin  
(B) Rubber, cellulose  
(C) Monoterpenes, diterpenes  
(D) Adenosine, sucrose
2. The acid used in the chemical analysis of living tissue is  
(A) Sulphuric acid.  
(B) Nitric acid.  
(C) Hydrochloric acid.  
(D) Trichloroacetic acid.
3. A non-polymeric substance in acid-insoluble fraction is  
(A) Protein. (B) DNA.  
(C) Polysaccharide. (D) Lipid.
4. Identify the wrong statement.  
(A) Lipids are not strictly macromolecules.  
(B) The acid-soluble pool represents roughly the cytoplasmic composition.  
(C) The macromolecules from cytoplasm and organelles become the acid-insoluble fraction.  
(D) Nucleic acids are the second most abundant component of cell in terms of percentage of total cellular mass.
5. During the elemental analysis of tissue, if the tissue is fully burnt, all the carbon compounds are oxidised to gaseous form and the remaining is called ash. This ash contains  
(A) Carbohydrate, lipids, and proteins.  
(B) Sodium, potassium, calcium, and magnesium.  
(C) Glucose, glycine, triglyceride, and adenine.  
(D) Carbohydrate, RNA, and enzymes.
6. Pectinases belong to which class of enzyme?  
(A) Ligases (B) Hydrolases  
(C) Lyases (D) Transferases
7. Identify the heteropolysaccharide among the following sugars:  
(A) Cellulose (B) Inulin  
(C) Starch (D) Peptidoglycan

8. Match the options given in column I with those of column II and choose the correct option.

	Column I		Column II
A.	Triose	I	Xylose
B.	Tetrose	II	Erythrose
C.	Pentose	III	Glyceraldehyde
D.	Hexose	IV	Fructose

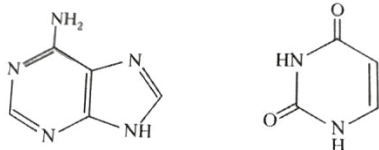
- (A) A-III, B-II, C-I, D-IV  
(B) A-IV, B-II, C-I, D-III  
(C) A-I, B-II, C-III, D-IV  
(D) A-II, B-II, C-III, D-IV

9. Identify the wrong statement with respect to cellulose.  
(A) It is the most abundant organic substance in nature.  
(B) It is found in the cell wall of plants.  
(C) It has  $\beta$ -1,4 linkage between the glucose molecules.  
(D) It shows straight chain as well as branched chain.
10. Starch and glycogen differ in  
(A) Type of monomers in them.  
(B) Type of cells in which they are present as stored food.  
(C) Type of glycosidic bond between glucose molecules in straight chain.  
(D) Type of glycosidic bond between glucose molecules at branch points.
11. Which of the following is called brain sugar?  
(A) Glucose (B) Galactose  
(C) Fructose (D) Maltose
12. The chemical formulae for maltose and lactose  
(A)  $C_{12}H_{22}O_{12}$  and  $C_{12}H_{22}O_{12}$   
(B)  $C_{12}H_{24}O_{12}$  and  $C_{12}H_{24}O_{12}$   
(C)  $C_{12}H_{22}O_{11}$  and  $C_{12}H_{22}O_{11}$   
(D)  $C_6H_{12}O_6$  and  $C_{12}H_{22}O_{11}$
13. The skin pigment melanin is synthesised from which of the following amino acids?  
(A) Tryptophan (B) Tyrosine  
(C) Threonine (D) Serine
14. Zwitterion has  
(A) Only positive charge.  
(B) Only negative charge.  
(C) Both positive and negative charges  
(D) Either positive or negative charge.

15. Choose the correct match.  
 (A) Aspartic acid Optically inactive  
 (B) Phenylalanine-Aromatic amino acid  
 (C) Lysine-Acidic amino acid  
 (D) Arginine-Sulphur-containing amino acid
16. Which protein structure does the following represent? Gly-Glu-Ser-Tyr-Cys  
 (A) Primary structure  
 (B)  $\alpha$ -Helix  
 (C)  $\beta$ -Pleated  
 (D) Secondary structure
17. Glycosidases, lipases and proteases belong to which class of enzymes?  
 (A) Hydrolases (B) Ligases  
 (C) Isomerases (D) Transferases
18. Formation of peptide bond is a type of  
 (A) Dehydration synthesis.  
 (B) Hydration synthesis.  
 (C) Metallic bond.  
 (D) Hydrolytic reaction.
19. All proteins are  
 (A) Enzymes.  
 (B) Homopolymers.  
 (C) Heteropolymers.  
 (D) Extended rigid rod like in shape.
20. Protein amino acids are laevorotatory and asymmetrical, except  
 (A) Glycine (B) Tyrosine  
 (C) Serine (D) Threonine
21. All are essential fatty acids except  
 (A) Arachidonic acid. (B) Oleic acid.  
 (C) Linoleic acid. (D) Linolenic acid.
22. Mark the odd one with respect to steroids.  
 (A) Cholesterol (B) Bile salt  
 (C) Testosterone (D) Lecithin
23. Lipids are obtained in  
 (A) Acid-soluble pool.  
 (B) Retentate pool.  
 (C) Acid-insoluble fraction.  
 (D) More than one option is correct.
24. Follicular hyperkeratosis or phrynoderma is caused due to the deficiency of  
 (A) Essential fatty acids.  
 (B) Essential amino acids.  
 (C) Dietary fibres.  
 (D) Proteins and calories.
25. Prostaglandins are derived from  
 (A) Oleic acid.  
 (B) Arachidonic acid.  
 (C) Stearic acid.  
 (D) Ascorbic acid.
26. Which of the following is incorrect with respect to saturated fatty acids?  
 (A) They esterify with glycerol to form hard fats.  
 (B) They increase the risk of heart diseases.  
 (C) They can undergo hydrogenation reaction.  
 (D) They do not have double bonds.
27. Phospholipids are important constituents of cell membrane because they  
 (A) Contain glycerol.  
 (B) Act as receptors for chemical messengers  
 (C) Contain both polar and nonpolar ends.  
 (D) Bind irreversibly with proteins
28. A fatty acid with two double bonds is  
 (A) Oleic acid.  
 (B) Linolenic acid.  
 (C) Linoleic acid.  
 (D) Arachidonic acid.
29. Which of the following steroidal compounds is used in the synthesis of antifertility pills?  
 (A) Diosgenin  
 (B) Digitoxin  
 (C) Glycocholic acid  
 (D) Taurocholic acid
30. Identify the wrong statement with respect to the structure of DNA?  
 (A) One turn of the helical structure of DNA has 10 base pairs.  
 (B) The nitrogen bases are projected perpendicular to the sugar-phosphate-sugar backbone but face inside.  
 (C) A and G of one strand compulsorily base pair with C and T, respectively.  
 (D) There are two hydrogen bonds between A and T, and three hydrogen bonds between G and C.
31. Read the following statements:  
 (i) The adjacent nucleotides in a nucleic acid are linked by phosphodiester bonds.  
 (ii) Thiamine and uracil are not found in DNA.  
 (iii) B-DNA has left-handed helical structure with 10 base pairs per turn.  
 (iv) Pyrimidines are double-ring structures with four nitrogen atoms.  
 Which of the above statements are correct?  
 (A) (i) and (ii) (B) (ii) and (iii)  
 (C) (iii) and (iv) (D) (i) and (iv)

32. The similarity in DNA and RNA is having  
 (A) Similar pyrimidine bases.  
 (B) Similar pentose sugars.  
 (C) Double helical structure.  
 (D) Polymers of nucleotides.

33. Identify the structures A and B.



	A	B
(A)	Adenine	Cytosine
(B)	Adenine	Uracil
(C)	Guanine	Uracil
(D)	Guanine	Cytosine

34. Purines are nine-membered double-ring nitrogenous bases with nitrogen atoms at  
 (A) 1, 3, 4, 4 position.  
 (B) 2, 3, 5, 7 position.  
 (C) 1, 3, 7, 9 position.  
 (D) 5, 6, 7, 8 position.

35. Which of the following is incorrect with respect to Chargaff's rules?  
 (A) Phosphate and deoxyribose sugar occur in equal amount.  
 (B) The ratio of  $\frac{A+G}{T+C}$  is specific for a species.  
 (C) There are double hydrogen bonds between A and T and triple hydrogen bonds between G and C.  
 (D) Molar concentration of purines is equal to the concentration of pyrimidines.

#### (SECTION-B)

36. Which of the following are different in RNA and DNA?  
 (A) Purines and pyrimidines  
 (B) Sugar and purines  
 (C) Sugar and pyrimidines  
 (D) Purines and pyrimidines
37. Enzymes that catalyze the transfer of atom or group between two molecules is known as \_\_\_\_\_  
 (A) oxidoreductases (B) transferases  
 (C) ligases (D) isomerases
38. Which of the following is a catabolic pathway?  
 (A) Formation of proteins from amino acids  
 (B) Breakdown of glucose into lactic acid in skeletal muscle  
 (C) Formation of cholesterol from acetic acid  
 (D) Formation of glycogen from glucose

39. Glycosidic bond is formed between  
 (A) Adjacent nucleotides in a polynucleotide chain.  
 (B) Amino and carboxyl groups of two amino acids.  
 (C) Two carbon atoms of adjacent monosaccharides.  
 (D) Phosphate and hydroxyl group of sugar in a nucleotide.

40. Elimination of water moiety during the formation of peptide bond is called  
 (A) Dehydration. (B) Hydration.  
 (C) Isomerisation. (D) Esterification.

41. \_\_\_\_\_ was the first enzyme to be crystallised and purified.  
 (A) Zymase (B) Amylase  
 (C) Urease (D) Aldolase

42. Which of the following is an incorrect statement?  
 (A) Proenzymes or zymogens are the inactive precursors of enzymes.  
 (B) Emil Fischer gave the "Induced Fit" model to explain enzyme activity.  
 (C) Enzyme catalase has haem as its prosthetic group.  
 (D) Enzymes linked with food digestion in our gut are mostly hydrolases.

43. Enzymes that catalyse removal of groups from substrates by mechanisms other than hydrolysis leaving double bonds are  
 (A) Transferases. (B) Lyases.  
 (C) Oxidoreductases. (D) Isomerases.

44. Which of the following type of enzyme inhibition is used for the control of bacterial pathogens by sulpha drugs?  
 (A) Allosteric inhibition  
 (B) Competitive inhibition  
 (C) Feedback inhibition  
 (D) Non-competitive inhibition

45. The protein part of the holoenzyme or conjugate enzyme is called  
 (A) Prosthetic group. (B) Coenzyme.  
 (C) Cofactor. (D) Apoenzyme.

46. Which of the following statement (s) is/are correct with respect to the given reaction?  
 $\text{CO}_2 + \text{H}_2 \rightleftharpoons \text{H}_2\text{CO}_2$   
 (A) In the absence of enzyme, 200 molecules of carbonic acid are formed per hour.  
 (B) In the presence of carbonic anhydrase, 600,000 molecules of  $\text{H}_2\text{CO}_3$  are formed per second.  
 (C) The presence of enzyme increases the rate of reaction 10 million times.  
 (D) All are correct

47. Streptokinase is used for  
(A) Pre-digesting baby food.  
(B) Clearing blood clots of blood vessels in atherosclerosis.  
(C) Clearing fruit juices.  
(D) Preparation of cheese
48. Arrange the following steps of the catalytic cycle of an enzyme action in the correct order.  
I. The binding of the substrate induces the enzyme to alter its shape, fitting more tightly around the substrate.  
II. The enzyme releases the products of the reaction, and the free enzyme is ready to bind to another molecule of the substrate.  
III. The substrate binds to the active site of the enzyme, fitting into the active site.  
IV. The active site of the enzyme, now in proximity of the substrate, breaks the chemical bonds of the substrate and the new enzyme-product complex is formed.  
(A) I→II→IV→III      (B) III→I→IV→II  
(C) III→IV→I→II      (D) IV→II→III→I
49. The substrate concentration at which the chemical reaction catalysed by an enzyme attains half of its maximum velocity is called  
(A)  $K_m$   
(B)  $1/2$  for  $V_{max}$   
(C) Michaelis constant  $\mu$   
(D) Both (A) and (C)
50. Systematic approach of naming enzymes has been recommended by the Commission on Enzymes of the  
(A) International Union of Physiology  
(B) International Union of Biochemistry  
(C) International Union of Biotechnology  
(D) International Union of Genetic Engineering

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