

DAY-4 : BIOLOGY

Chapter(s) : Biomolecules , Cell Cycle And Cell Division, Transport In Plants

Biomolecules

- Find the number of hydrogen bonds and phosphodiester bonds present between the nucleotides which are present in the DNA having 119 A^0 length and 18 thymine bases in it
 - 1) 70, 70
 - 2) 70, 69
 - 3) 87, 68
 - 4) 87, 70
- A triglyceride consists of
 - 1) Three glycerols esterified to each other
 - 2) Three fatty acids esterified to glycerol molecule
 - 3) Three glycerols esterified to one fatty acid molecule
 - 4) Three glycerols esterified to one fatty acid molecule
- Aromatic amino acids are
 - 1) Glycine and Tyrosine
 - 2) Valine and Tryptophan
 - 3) Tyrosine and Tryptophan
 - 4) Glycine and Phenylalanine
- Adult human haemoglobin consists of
 - 1) 2 subunits of 2 types
 - 2) 4 subunits of one type
 - 3) 4 subunits of four types
 - 4) 4 subunits of two types
- The Nucleotide sequence of one strand of DNA is given as $5' \overline{ATGCCATTGAAT} 3'$. Then find out nucleotide sequence of opposite strand
 - 1) $5' \overline{TACGGTAACTAA} 3'$
 - 2) $3' \overline{ATGCCATTGAAT} 5'$
 - 3) $5' \overline{ATGCCATTGAAT} 3'$
 - 4) $3' \overline{TACGGTAACTTA} 5'$
- 'R' group in aminoacids Serine and Alanine respectively are
 - 1) H, CH_2
 - 2) CH_2OH, CH_3
 - 3) NH_2, CH_2
 - 4) CH_3, CH_2, OH
- Identify the correct set with all nucleosides from the following
 - 1) Guanosine, thymidine, adenine
 - 2) Cytidine, uridine, guanosine
 - 3) Uridine, guanine, thymidine
 - 4) Adenosine, cytidine, thymine
- GLUT -4 is a polymer of
 - 1) Monosaccharides
 - 2) Nucleotides
 - 3) Amino acids
 - 4) Fatty acids
- Which one is the sweetest sugar
 - 1) Sucrose
 - 2) Glucose
 - 3) Fructose
 - 4) Maltose
- Lipids are insoluble in water because they are
 - 1) Neural
 - 2) Hydrophilic
 - 3) Hydrophobic
 - 4) Zwitterions
- On hydrolysis a nucleoside would not yield
 - 1) Phosphoric acid
 - 2) Purine
 - 3) Pyrimidine
 - 4) pentose sugar

12. The value of ratio of purines and pyrimidines is 0.2 in one strand and value of ratio of purine and pyrimidines in its complementary strand is

- 1) 2 2) 5 3) 8 4) 4

13. Which of the following is not an amino acid?

- 1) Lysine 2) Arginine
3) Thymine 4) Tryptophan

14. The differences between one amino acid and another are found in the

- 1) R-group 2) Amino group
3) Peptide bond 4) Carboxyl group

15. Element which is negligible amounts in human body is

- 1) Silicon 2) Nitrogen
3) Magnesium 4) Sulphur

16. Arachidonic acid contains-

- (1) 18C + 1 carbon of —COOH group.
(2) 19 C + 1 carbon of —COOH group
(3) 25 C + 1 carbon of —COOH group.
(4) 27C + 1 carbon of —COOH group.

17. Which one is incorrect match?

- (1) Alkaloids – Morphine
(2) Toxins – Ricin (3) Lectins – Curcumin
(4) Pigments – Anthocyanin

18. Inulin is a polymer of

- (1) Glucose (2) Fructose
(3) Sucrose (4) Maltose

19. In sea urchin DNA which is double stranded 17% of base were shown to be cytosine. The % of other three base to be present in DNA are.

- (1) G -17%, A -16.5%, T -32.5%
(2) G -17% , A - 33% , T- 33%
(3) G -8.5%, A - 50% , T -24.5%
(4) G 34% , A - 24.5% , T -24.5%

20. A nitrogenous base is linked to the pentose sugar through

- (1) Phosphodiester linkage
(2) N-glycosidic linkage

- (3) Ester linkage
(4) Phosphoester linkage

21. Which of the following secondary metabolite is a toxin?

- (1) Codeine
(2) Monoterpenes
(3) Concanavalin – A (4) Ricin

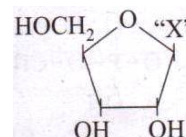
22. Which of the following is the simplest amino acid?

1. Alanine 2. Asparagine
3. Glycine 4. Tyrosine

23. How many hydrogen bonds are present between complementary nitrogen bases of a DNA with 5 turn and 20 adenines ?

1. 130 2. 90 3. 100 4. 80

24. Given below is the diagrammatic representation of one of the categories of small molecular weight organic compounds in the living tissues. Identify the category shown and the one blank component 'X' in it.



Category

Component

- | | |
|----------------|-----------------|
| 1. Nucleotide | Adenine |
| 2. Nucleoside | Uracil |
| 3. Cholesterol | Guanine |
| 4. Amino acid | NH ₂ |

25. The blood concentration of glucose in normal healthy individual is

- 1) 2 – 3 mM 2) 4.5 to 5.0 mM
3) 6 – 7 mM 4) 4 mM

26. Living state is

- 1) Non – equilibrium, non – steady state
2) Equilibrium, steady state
3) Non – equilibrium , steady state
4) Equilibrium, non – steady state

27. At each step of ascent in a B – DNA double helical structure, the strand turn.

- 1) 18° 2) 72°
- 3) 90° 4) 36°

28. Which amino acid is represented by 'E' symbol (code) ?

- 1) Tyrosine 2) Glutamic acid
- 3) Cysteine 4) Serine

29. The most abundant chemical in living organisms is

- 1) Protein 2) Carbohydrates
- 3) Nucleic acids 4) Water

30. The chitinous exoskeleton of arthropods is formed by the polymerization of

- 1. Lipoglycans
- 2. Keratin sulphate and chondroitin sulphate
- 3. D-glucosamine
- 4. N-acetyl glucosamine

ANSWERS

1) 3	2) 2	3) 3	4) 4	5) 4	6) 2	7) 2	8) 3	9) 3	10) 3
11) 1	12) 2	13) 3	14) 1	15) 1	16) 2	17) 3	18) 2	19) 2	20) 2
21) 4	22) 3	23) 1	24) 2	25) 2	26) 3	27) 4	28) 2	29) 4	30) 4