Question Bank

B.Sc (Part III) (Semester-VI) (CBCS)Examination April-May 2022

Botany (Paper XIII)

Plant Biochemistry and Molecular Biology DSC-F25

Subject code-81680

Multiple Choice Questions

1. Carbohydrates contain ……..%of dry weight of the plants.

a. 10 b. 40 c. 60 d.80

2. ……..are the basic units of carbohydrates which cannot be further hydrolysed.

a. Disaccharides b. Monosaccharides c. Trisaccharides d. Polysaccharides

3. Proteins are …….of high molecular weight.

a. linear polymers b. monomers c. dimers d. pentamers

4. Amino acids are a group of organic components containing ……functional groups.

a. one b. two c. three d. four

5. Fatty acids are the organic acids with a long ……..

a. carbon chain b. phosphorus chain c. nitrogen chain d. hydrocarbon chain

6. Nucleic acid consist of monomer called as ……..

a. nucleotide b. nucleoside c. nitrogen base d. none of these

7. Pyrimidine has…….ring structure.

a. double b. single c. triple d. none of these

8. Disaccharides are composed of two monosaccharide's linked by ……..

a. O – glycosidic bond b. A – glycosidic bond c. C – glycosidic bond d. X – glycosidic bond

9. …….sugar is present in the milk of mammals.

a. Fructose b. Lactose c. Glucose d. Galactose

10. Bile acids are ……..which are useful for digestion of fats in intestine.

a. steroids b. alkalis c. proteins d. hydrocarbons

11. Proteins contain……. % of nitrogen

a. 13 – 19 b. 50 – 60 c. 60 – 73 d. 0 – 4

12. The point at which the molecules has equal +ve and -ve charges is called as……

a. electric point b. dielectric point c. trielectric point d. isoelectric point

13. …….forms the backbone of double stranded structure of DNA.

a. Sugar and phosphate chain b. sugar phosphate and pentose sugar

c. phosphate chain and nitrogen base d. none of these

14. Adenine pairs with thymine and guanine always pairs with cytosine and vice – versa, such type pairing is called as……

a. supplementary base pairing b. complementary base pairing c. both

d. none of these

15. In sugar ring an additional asymmetric carbon atom is created called as……..

a. anomeric carbon b. dimeric carbon c. trimeric carbon d. oligomeric carbon

16. …….bond is covalent bond formed by the condensation reaction between a sugar and the – OH group of other compound.

a. Non – glycosidic b. Glycosidic c. Hydrogen d. Phosphate

17. Fatty acids are …… at room temperature.

a. vapours b. gas c. liquid d. solid

18. Bloor classified lipids into ……groups.

a. one b. two c. three d. four

19. Phenyl aniline is an example of ……amino acid.

a. aliphatic b. heterochromatic c. heterocyclic d. aromatic

20. The amino acids having the $–NH_2$ group on the left is called as …….

a. L - amino acid b. D - amino acid c. E - amino acid d. G - amino acid

21. In RNA the pyrimidine Uracil is substituted for ……

a. cytosine b. thymine c. adanine d. guanine

22. mRNA carries message from …….to……

a. DNA to Mitochondria b. DNA to tRNA c. Ribosome to DNA d. DNA to Ribosome

23. 5'-phosphate group of one nucleotide unit is joined to the 3'-hydroxyl group of the next nucleotide, creating …….

a. phosphodiester linkage b. Glycosides linkage c. Covalent linkage d. Vander wall interaction

24……..of the following bases is not present in DNA.

a. Adenine b.
b. Guanine
c. Thymine

d. Uracil

25…… of the nucleotide is responsible for the formation of bonds in DNA double helix?

a. Nitrogen Base
b. Sugar
c. Phosphate Group
d. Hydroxyl group

26. Nucleoside is a pyrimidine or purine base ……. bonded to a sugar

a. Covalently
b. Ionically
c. Hydrogen
d. none of the above

27. A nucleotide consists of……

a sugar, a base and a phosphate

a sugar and a phosphate

a base and a phosphate

None of above

28. A nucleoside consists of……

a sugar, a Nitrogen base and a phosphate

a sugar and a phosphate

a Nitrogen base and a phosphate

a sugar, a Nitrogen base

29. A five carbon sugar lacking a hydrogen at the number 2 carbon is found in…….

a. DNA
b. RNA
c. tRNA
d. mRNA

30. Two strands of DNA held together by…..

a. Hydrogen bond
b. Vander wall interaction
c. Ionic interaction
d. Covalent interaction

31. DNA strands run …….. in relation to each other.

a. Antiparallel

b. Parallel

c. Perpendicular

d. both a and b

32. Anticodon is present in…….

a. mRNA

b. tRNA

c. rRNA

d. aRNA

33. During replication, Okazaki fragments elongate by……

a. leading strand towards the replication fork

b. lagging strand towards the replication fork

c. leading strand away from the replication fork

d. lagging strand away from the replication fork

34. ……..enzymes separates the two strands of DNA during replication?

a. Gyrase

b. Topoisomerase

c. Helicase

d. DNA polymerase

35. The fragments of DNA are joined together by …….. enzymes.

a. Primase

b. Ligase

c. Helicase

d. DNA polymerase

36. ……..is an inducer of the lac operon?

a. Allolactose

b. Lactose

c. Galactose

d. Glucose

37. Waxes are highly ……in water

a. a. soluble b. insoluble c. precipitated d. partly soluble

38. Amino acids are a group of organic components containing ……..functional groups.

b. a. one b. two c. three d. four

Broad Questions

1. Write the classification of carbohydrates with suitable examples.

2. Explain in brief the structure of proteins.

3. Describe the Watson and Crick model of DNA.

4. Explain in brief classification of Lipids.

5. Describe Protein biosynthesis in Eukaryotes

6. Describe DNA replication in Eukaryotes.

7. Explain in detail the structure of Proteins.

8. Describe lac operon with suitable diagram

9. Describe composition and structure of nucleic acids.

10. Give the detailed account of replication of DNA in eukaryotes.

Short Notes

1. Physical properties of carbohydrates

2. Fatty acids

3. Classification of proteins based on complexity

4. Types of RNAs

5. Significance of lipids

6. Isomerism in carbohydrates

7. Biological functions of proteins

8. DNA replication in Eukaryotes.

9. Different forms of DNA

10. Role of enzymes in DNA replication.

11. Difference between RNA and DNA

12. Components of DNA & RNA

13. Describe the detailed Structure of DNA

14. Describe Lac operon with diagram

15. Tryptophan operon