# BOTANY PAPER II (DSC II)

## BIOMOLECULES AND CELL BIOLOGY

## BOTANY

Q. 1: Select appropriate answer from each of the following rewrite the sentences,

1. Carbohydrates are represented by formula……
(a) $C(H_2O)2$
(b) $C(H_2O)$
(c) $C_2(H2O)$
(e) C(H2O2)

2. Full form of IUPAC is……..
(a) International Unit of Pure and Applied Chemistry
(b) International Union of Pure and Applied Chemistry
(c) International Union of Protein and Applied Chemistry
(d) International Union of Polymer and Applied Chemistry

3. Ketoses are identified by the suffix.
(a) "-ulose"
(b) "-ose"
(c) "-diose"
(d) "-udose"

4. Glucose is also known as

(a) milk sugar

(b) cane sugar
(c) blood sugar
(d) beet sugar

5. ……is known as sweetest sugar.

(a) Glucose
(c) Lactose
(b) Fructose
(d) Maltose

6. Sucrose is a……

(a) monosaccharide
(b) disaccharide
(c) polysaccharide
(d) oligosaccharide

7. ……is also known as milk sugar.

(a) Glucose

(b) Fructose
(c) Lactose
(d) Maltose

8. Cellulose is a…….
(a) monosaccharide
(b) disaccharide
(c) polysaccharide
(d) nonsaccharide

9. Natural starch is a mixture of……

(a) amylose and amylopectin
(b) glucose and fructose
(c) lactose and sucrose
(d) maltose and cellulose

10. Proteins are linear polymeric substances i.e., polymers of……..

(a) amino acids
(b) monosaccharides
(c) fatty acids
(d) nucleosomes

11. Large numbers of amino acids are linked together by polypeptide chain. to form…..

(a) hydrogen bond
(b) peptide bond
(c) sulfur bond
(d) disufide bond

12. Amino acids are the building blocks of the……

(a) carbohydrates
(b) lipids
(c) proteins
(d) nucleic acids

13. ……..proteins in their structure only possess amino acids.

(a) conjugated
(b) complex
(c) compound
(d) simple

14. Amino acids react with to form a blue-colored compound.

(a) ninhydrin

(b) sulfanilamide

(c) sulfuric acid

(d) copper sulfate

15. --------are complexes formed by the association of nucleic acids with proteins.

(a) chromoproteins
(b) nucleoproteins
(c) glycoproteins
(d) lipoproteins

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(b) nucleoproteins
(c) glycoproteins
(d) lipoproteins

22. Cell wall is……. In nature

(a) Permeable
(b) Semi-permeable
(c) Partly-permeable
(d) Non-permeable

23. The cell membrane is about ……A in thickness

(a) 78
(b) 99
(c) 75
(d) 85

24. The plant cell wall is made up of ……..layers.
(a) one
(b) two
(c) three
(d) four

25. The term ----was coined by Flemming in 1882.
(a) prophase
(b) interphase
(c) Telophase
(d) Metaphase

26. …….is longest phase of karyokinesis.
(a) Prophase
(b) Anaphase
(c) Telophase
(d) Prophase

27. In plants, …….takes place by plate formation.
(a) cytokinesis
(b) karyokinesis
(c) G 1 phase
(d) Telophase

28. The term ……was proposed in October 1905 by Koernicke
    (a) mitosis
    (b) cell cycle
    (c) meiosis
    (d) all of the above

29. '……’known as reductional cell division.
    (a) mitosis
    (b) amitosis
    (c) meiosis
    (d) None of the above

30. Mitosis is…….cell division.
    (a) equational
    (b) reductional
    (c) simple
    (d) complex

31. ---division is called as 'homotypic division".
    (a) Mitosis
    (a) Meiosis-I
    (b) Cytokinesis-1
    (c) Meiosis-II

# Long questions

1. What are carbohydrates? Describe classification of carbohydrates.

2. Describe classification of monosaccharides and oligosaccharides with example.

3. Define carbohydrates. Add a note on classification of polysaccharides.

4. Explain ultrastructure and functions of nucleus

5. Explain ultrastructure and functions of chloroplast.

6. Explain ultrastructure and functions of mitochondrion.

7. Explain ultrastructure and functions of ribosome.

8. Explain ultrastructure and functions of glyoxysome

9. Explain ultrastructure and functions of peroxisome.

10. What is lipid? Describe physical properties of lipid.

11. Define lipid? Describe chemical prpersties of Lipid.

12. Define the term protein. Add a note on their properties

13. Describe the role of protein

14. Describe the structure of DNA

15. Describe the types of RNA
16. Describe the structure of eukaryotic cell

17. Describe the structure of prokaryotic cell

18. Describe the structure of plasma membrane with references to fluid mosaic model.

19. Describe mitosis

20. Describe meiosis

21. Give comparative account on mitosis and meiosis

22. Define cell cycle and describe its various phases.

23. Describe the structure of eukaryotic cell nucleus

24. Describe the structure of eukaryotic cell chloroplast

25. Describe the structure of eukaryotic cell mitochondria

26. Describe the structure of eukaryotic cell ribosome

27. Describe the structure of eukaryotic cell glyoxysome

28. Describe the structure of eukaryotic cell peroxisome

## Write short notes on the following.

1. Nomenclature of carbohydrates

2. Monosaccharides

3. Oligosaccharides

4. Polysaccharides

5. Example of monosaccharide

6. Example of disaccharide

7. Example of oligosaccharide

8. Example of polysaccharide

9. Ultrastructure of chloroplast

10. Functions of chloroplast

11. Ultrastructure of mitochondrion

12. Functions of mitochondrion

13. 70S ribosome

14. 80S ribosome

15. Types of ribosomes

16. Prokaryotic ribosome

17. Eukaryotic ribosome

18. Glyoxysome

19. Nucleus

20. Functions of Nucleus

21. Structure of peroxisome

22. Functions of peroxisome

23. Physical properties of lipid

24. Chemical properties of lipid

25. Significances of lipids.

26. Interphase

27. Significances of cell cycle

28 Significances of meiosis

29. Significances of mitosis

30. Meisosis

31. Mitosis

32. M-Phase

33. Zygotene

34. Pachytene

35. Cell cycle

36. Cell wall

37. Structure of cell membrane

38. Fluid mosaic model

39. Prokaryotic cell

40 Eukaryotic cell

41. DNA

42. mRNA

43. rRNA

44. tRNA

45. Srna

46.Properties of proteins

47. Biological role of protein

48. Structural of protein