

**B. Sc. DEGREE EXAMINATION, NOVEMBER 2009**  
**BRANCH V (a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY**  
**FIFTH SEMESTER**

**COURSE : MAJOR – CORE**  
**PAPER : CELL BIOLOGY**  
**TIME : 3 HOURS**

**MAX.MARKS:100**

**SECTION – A**

**ANSWER ALL QUESTIONS**

**(18 marks)**

**Choose the correct answer**

1. During cell cycle the post DNA synthesis phase is  
a) M Phase b) G1 Phase c) G2 phase d) S Phase
2. V Shaped chromosomes are called  
a) Acrocentric b) Telocentric c) Metacentric d) Sub-metacentric
3. Which microbody is present only in plant cells?  
a) peroxisome b) glyoxysome c) ribosome d) lysosome
4. The mitochondrial DNA contains more \_\_\_\_\_ contents than the nuclear DNA.  
a) adenine and thymine b) guanine and cytosine c) adenine d) guanine
5. The Golgi complex is absent in  
a) bacteria b) blue green algae c) mycoplasma d) all the three

**II Fill in the blanks**

6. Newly formed lysosomes are called \_\_\_\_\_.
7. Glyoxysomes are found to occur in the cells of \_\_\_\_\_.
8. The nitrogen containing organic compounds of the DNA are of two types \_\_\_\_\_ and \_\_\_\_\_.
9. During protein synthesis the amino acids are transferred from cytoplasm to the active ribosome by the \_\_\_\_\_.
10. An aggregation of ribosomes, connected by a strand of mRNA which is active in protein synthesis is called \_\_\_\_\_.

**Match the following**

- |          |   |             |
|----------|---|-------------|
| 11. AUG  | - | Cap         |
| 12. mRNA | - | Ribosome    |
| 13. rRNA | - | Stop codon  |
| 14. UAG  | - | Start codon |

**State whether true or false.**

15. Microtubules form the structural units of the centrioles and basal granules.
16. The function of the Golgi complex is secretion of proteins and enzymes and necessary materials for cell wall formation.

17. The 28S and 5S rRNA's occur in smaller ribosomal subunit.
18. The nucleolus stores the rRNA molecules.

**II Answer any six of the following in 50 words (6 x 3 = 18)**

19. SER
20. Glyoxysomes
21. Significance of Mitosis
22. Plasmalemma
23. Heterochromatin
24. Base Pair
25. Operon
26. Malignant tumour
27. Cell theory.

**Section – B**

**Answer any four of the following. Each answer not to exceed 200 words.  
Draw diagrams wherever necessary (4 x 6 =24)**

28. Distinguish phagocytosis from Pinocytosis.
29. What are the lysosomes? Describe their structure and function.
30. Describe the ultrastructure of nuclear envelope.
31. Why are mitochondria termed as the “power house” of the eukaryotic cells?
32. Describe the structure of giant chromosomes.
33. Discuss the organisation of microtubules in cilia and flagella.

**Section – C**

**Answer any two of the following. Each answer not to exceed 1000 words. Draw diagrams wherever necessary (2 x 20 = 40)**

34. Explain in detail about the molecular organisation of the cell membrane with various models.
35. Describe the Ultrastructure of chloroplast. Add a note on biogenesis.
36. Describe in brief the complete process of protein synthesis.
37. What is meiosis? Describe the major features of each meiotic phase.

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