

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2008-09)

SUBJECT CODE: BT/MC/CB54

B. Sc. DEGREE EXAMINATION, NOVEMBER 2010
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 x 1=18 marks)

Choose the correct answer

- Plastids without pigments are called
a) Leucoplasts b) Chloroplast c) Chromoplasts
- When the centromere is at the tip of the chromosome it is called
a) Telocentric b) Acrocentric c) Metacentric
- Bouquet stage is seen in
a) Pachytene b) Zygotene c) Leptotene
- The centromere of the chromosomes divides during
a) Telophase b) Metaphase c) Anaphase
- Microtubules are found only in
a) Prokaryotes b) Amoeba c) Eukaryotes
- Fluid mosaic model of plasma membrane is proposed by
a) Johnson b) Singer & Nicolson c) Robertson

II Fill in the blanks

- _____ is called the power house of the cell.
- _____ of Golgi complex consists of flattened sacs, piled one upon the other.
- The cytoplasmic bridges between adjacent cells are called_____.
- The DNA making an exact copy of itself is called_____.
- A sugar molecule and a nitrogenous base form a _____.
- The dark reaction takes place in the _____.

III. Match the following

- | | | |
|------------------------|---|---------------------|
| 13. Pyrimidines | - | Mitochondria |
| 14. Salivary glands | - | Stores starch |
| 15. Nucleotides | - | Cytosine |
| 16. Cytochrome oxidase | - | Phosphate group |
| 17. Histones | - | Polytene chromosome |
| 18. Amyloplasts | - | Basic proteins |

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

19. Chloroplast DNA.
20. Rough Endoplasmic Reticulum.
21. Q – Banding.
22. Cell Theory.
23. Signaling molecules.
24. Telophase.
25. Functions of Endoplasmic Reticulum.
26. Purines.
27. Satellite chromosomes.

Section – B

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

28. Explain the structure and functions of Golgi apparatus.
29. Write notes on Heterochromatin and Euchromatin.
30. Write notes on Histones and Non Histones.
31. List out the significance of Meiosis & Mitosis.
32. Describe any 2 molecular models of cell membrane.
33. “*Arabidopsis thaliana*” – Explain its significance in the developmental Biology of plants.

Section – C

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

34. Write an essay on Giant Chromosomes.
35. Compare the Prophase of Mitosis & Meiosis and also explain the stages of prophase of meiosis.
36. Write an essay on the Biogenesis, ultrastructure and Function of Chloroplast.
37. Describe in detail the structure of Nucleus.
