STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2004-05 & thereafter)

SUBJECT CODE: BT/MC/CB54

B. Sc. DEGREE EXAMINATION, NOVEMBER 2008
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)

I. CHOOSE THE CORRECT ANSWER

1. Rod shaped chromosomes with centromere at the proximal end are known as _____
   a) Metacentric chromosome b) Telocentric chromosome
   c) Submetacentric chromosome d) Centric chromosome
2. The egg cells lack in _____
   a) Endoplasmic Reticulum b) Nucleus
   c) Cell wall d) Chloroplast.
3. _____ are the site of protein synthesis
   a) Ribosomes b) Nucleolus
   c) Cell wall d) Golgi bodies
4. _____ enzyme winds the DNA strands during replication
   a) DNA polymerase I b) Ligase
   c) Helicase d) RNA polymerase
5. Ribosomes are made up of
   a) DNA and RNA b) Proteins and rRNA
   c) Lipids and Proteins d) Proteins and tRNA.

II. FILL IN THE BLANKS:

6. The plant cell wall is composed of carbohydrate known as _____.
7. _____ is the start codon.
8. The light reaction takes place in _____ part of chloroplast.
9. Apair of centriole is called_____.
10. The Polynucleate cells of plants are known as _____.

III. MATCH THE FOLLOWING:

11.	Cell theory	-	Robert Brown
12.	Lac operon	-	Schleiden and Schwann
13.	Nucleus	-	Jacob and Monod
14.	Chromosome	-	J.B. Farmer N.Waldeyer

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IV. STATE WHETHER TRUE OR FALSE:

15. Glyoxisomes occur only in animal cells.
16. The nuclear pores are enclosed by annuli
17. UAC is a stop codon.
18. In Meiosis interchange of chromatid segments take place between sister chromatids of homologous chromosomes.

V. ANSWER ANY 6 OF THE FOLLOWING IN 50 WORDS EACH (6x3=18)

19. Polytene chromosome
20. Cytoplasmic Streaming
21. Anaplasia
22. Thylakoids
23. Differentiate Hetero chromatin and Euchromatin
24. PPLO
25. Lysosomes
26. Chemical nature of the cell wall
27. Nucleolus

SECTION – B

Answer any four questions. Each answer not to exceed 200 words.
Draw diagrams wherever necessary: (4x6=24)

28. Describe the molecular structure and function of the tRNA.
29. List out the characteristics of the triplet codon.
30. Explain the organization of microtubules in cilia and flagella.
31. Give a comparative diagram of the various stages of mitosis and meiosis.
32. Enumerate the structure and biochemical activity of the peroxisomes.
33. What are the characteristic features of cancer cells?

SECTION – C

Answer any two questions. Each answer not to exceed 1000 words.
Draw diagrams wherever necessary: (2x20=40)

34. Give a detailed account on the ultrastructure, chemical composition and biogenesis of Mitochondria.
35. What are the various stages involved in the translation of the mRNA into a polypeptide chain? Explain.
36. Explain the different models proposed on the molecular organization of the plasma membrane.
37. Explain Operon concept in detail.

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