STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2011 – 12 & thereafter)

SUBJECT CODE: 11BT/MC/CB54

B. Sc. DEGREE EXAMINATION, NOVEMBER 2014
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)**

I. CHOOSE THE CORRECT ANSWER: **5 X 1 = 5 marks**

1. The wall thickenings of collenchyma cells contain.
   (a) Lignin (b) Pectin (c) Suberin
2. The nucleus was discovered by
   (a) Fontana (b) Porter (c) Robert Brown
3. Which of these does not have 70S ribosomes.
   (a) Mitochondria (b) Golgi body (c) Chloroplast
4. Semi-conservative mode of DNA replication was proved by
   (a) Singer & Nicolson (b) Scheiden & Schwann (c) Meselson & Stahl
5. Which of these is called the quiescent stage of the cell cycle?
   (a) G_0 phase (b) G_2 phase (c) G_1 phase

II. FILL IN THE BLANKS: **5 x 1 = 5 marks**

6. Golgi apparatus in plants is called ----------.
7. The lamellae of the grana are called ----------.
8. The histone octamer is found in the ----------
9. The enzyme involved in Photoreactivation is called --------.
10. DNA replication takes place during the ----------.

III. TRUE OR FALSE: **4 x 1 = 4 marks**

11. Robertson proposed the Fluid Mosaic Model of the plasma membrane.
12. SER is involved in the synthesis of lipids and steroidal hormones.
13. Giant chromosomes are seen in Acetabularia.
14. Mitosis reduces chromosome number to one half in the daughter cells.

IV. MATCH THE FOLLOWING : **4 x 1 = 4 marks**

15. Endosymbiont	-	lagging strand
16. Secondary wall	-	Chloroplast
17. Topoisomerase	-	Pits
18. Okasaki fragment	-	Supercoiling

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ANSWER ANY SIX QUESTION:
Each answer should not exceed 50 words. 6x3=18 marks

19. Cell theory
20. RER
21. Cisternae
22. Nuclear pore
23. Histone
24. Helicase
25. Frets
26. Synapsis
27. Arabidopsis thaliana

SECTION B

ANSWER ANY FOUR QUESTIONS. EACH ANSWER SHOULD NOT EXCEED 200 WORDS. DRAW DIAGRAMS WHEREVER NECESSARY. 4x6=24 marks

28. Give an account of the Cell wall.
29. Describe the structure and functions of Golgi complex.
30. Write notes on the structure of the flagellum.
31. Explain the structure and functions of the Nucleolus.
32. Describe the methods of DNA repair.
33. Describe Meiosis I.

SECTION C

ANSWER ANY TWO QUESTIONS.EACH ANSWER SHOULD NOT EXCEED 1000 WORDS. DRAW DIAGRAMS WHEREVER NECESSARY. 2x20=40 marks

34. Give an account of the origin, chemical composition and molecular organisation of the Plasma membrane.
35. Describe the Biogenesis, ultrastructure and functions of the Mitochondrion.
36. Write an essay on the structure and chemistry of chromosomes.
37. Describe the process of DNA replication in detail.

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