

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086
(For Candidates admitted during the academic year 2019 – 2020 & thereafter)

SUBJECT CODE: 19ZL/MC/CM54

B.Sc. DEGREE EXAMINATION - NOVEMBER 2022
BRANCH VI A – ADVANCED ZOOLOGY & BIOTECHNOLOGY
FIFTH SEMESTER

COURSE : MAJOR CORE
PAPER : CELL AND MOLECULAR BIOLOGY
TIME : 3 HOURS

MAX. MARKS: 100

SECTION – A

ANSWER ALL QUESTIONS

(10 x 3 = 30)

1. Differentiate between intrinsic and extrinsic proteins.
2. Comment on the significance of microtubules.
3. Expand the following: a) ERGIC b) GERL c) RER
4. Illustrate the nuclear pore complex.
5. Distinguish between heterochromatin and euchromatin.
6. List the causes for apoptosis.
7. Mention the role of DNA nucleases.
8. What is referred to as replication fork?
9. Define cistron.
10. Comment on intron and exon.

SECTION – B

ANSWER ANY FIVE QUESTIONS

(5 x 6 = 30)

(Draw diagrams where necessary)

11. Give an account on fluid mosaic model.
12. Explain polymorphism in lysosomes.
13. Describe the structure of polytene chromosome with reference to endomitosis.
14. Enumerate the different phases of cell cycle.
15. Describe the structure of tRNA and add a note on its functions.
16. Explain regulation of genes with reference to lac operon concept.
17. Enumerate the characteristics of the Genetic Code.

SECTION – C

ANSWER ANY TWO QUESTIONS

(2 x 20 =40)

(Draw diagrams where necessary)

18. Describe in detail the mechanism of transport across the plasma membrane.
19. Explain the structure and functions of mitochondria.
20. Summarise the characteristics of cancer cells. Add a note on tumour suppressor genes.
21. Discuss DNA repair mechanisms in detail.
