

Reg. No

Name

20P3022

M. Sc DEGREE END SEMESTER EXAMINATION - OCT/NOV 2020: JAN 2021

SEMESTER 3 : ZOOLOGY

COURSE : 16P3ZOOT10 : CELL AND MOLECULAR BIOLOGY

(For Regular - 2019 Admission and Supplementary - 2016/2017/2018 Admissions)

Time : Three Hours

Max. Marks: 75

PART A

Answer any 8 (2 marks each)

1. What are liposomes?
2. Enumerate the functions of integrins
3. What are cristae?
4. Why mitochondria is called the 'Power house of the cell'.
5. What is cytoskeleton? Mention its components.
6. Describe a cell surface receptor in which dimerization occurs in its working.
7. Identify 3 important second messengers in biological systems and discuss why you think they are important.
8. What are Cdks?
9. Differentiate between leukemia and lymphoma
10. Comment on the activation of protooncogenes to oncogenes
11. Explain Wobble hypothesis.
12. How lac- operon exerts negative control of gene expression.

(2 x 8 = 16)

PART B

Answer any 7 (5 marks each)

13. Briefly describe fluid mosaic model of cell membrane.
14. Explain the structure and functions of cadherins
15. Briefly explain the structure and functions of rough and smooth ER.
16. Structural organisation of microtubular organelles.
17. Briefly explain a cell signaling pathway associated with vision
18. Briefly explain the extrinsic pathway of apoptosis.
19. Classify cancers based on histology
20. Explain how cancer cells are different from normal cells.
21. What are the differences between eukaryotic and prokaryotic transcription ?
22. Explain chromatin remodelling as a mechanism of gene regulation.

(5 x 7 = 35)

PART C

Answer any 2 (12 marks each)

23. Explain how the chemistry of cell membrane is related to its functions.
24. Explain the molecular mechanism associated with of various senses in human body.
25. What is translation? Explain the steps involved in prokaryotic translation. Pointout the major differences that you find in eukaryotic translation.
26. Describe on the different methods of prokaryotic gene regulation.

(12 x 2 = 24)