TM243280X

Reg. No :.....

Name :.....

MASTER'S DEGREE (C.S.S) EXAMINATION, FEBRUARY 2024

2022 ADMISSIONS SUPPLEMENTARY (SAY)

SEMESTER III - CORE COURSE Zoology

ZO3C10TM20 - Cell Biology

Time : 3 Hours **Maximum Weight : 30**

Part A

I. Answer any Eight questions. Each question carries 1 weight **(8x1=8)**

1. Explain bulk transport with suitable diagrams.
2. Elucidate the structure of fibronectin and laminin.
3. State signal peptide hypothesis.
4. Demonstrate the role of endoplasmic reticulum.
5. Indicate the salient characteristics of intermediate filaments.
6. Describe convergence in cell signaling.
7. Assess the regulatory mechanism of GPCR pathway.
8. Analyze the phenomenon of calcium induced calcium release (CICR).
9. Expand on 'Eat me signals' in programmed cell death.
10. Describe diakinesis with the aid of diagrams.

Part B

II. Answer any Six questions. Each question carries 2 weight **(6x2=12)**

11. Enumerate the major functions of plasma membrane.
12. Outline the structure and types of collagen.
13. Summarize the structure and functions of lysosomes.
14. Emphasize on protein glycosylation within golgi complex.
15. Exemplify the mechanism of muscle contraction.
16. Give an account on TGF signaling pathway.
17. Demonstrate the role of calcium as an intercellular and intracellular messenger.
18. Tabulate the differences between mitosis and meiosis.

Part C

III. Answer any Two questions. Each question carries 5 weight **(2x5=10)**

19. Elaborate on the dynamic nature of the plasma membrane with relevant illustrations.
20. Endoplasmic reticulum plays an essential role in protein processing & sorting in eukaryotic cell. Substantiate this statement.
21. "Second messengers are the initiators of signal transduction pathways". Justify this statement.
22. Enumerate the major events in apoptosis. Explain in detail the pathways associated with apoptosis.