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Reg. No.....

Name.....

M.Sc. DEGREE (C.S.S.) EXAMINATION, JULY 2022

Third Semester

Faculty of Science

Branch VIII—Zoology

ZY 3C T12—CELL AND MOLECULAR BIOLOGY

(2012—2018 Admissions—Supplementary/Mercy Chance)

Time : Three Hours Maximum Weight : 30

Section I (Short Answer Type Questions)

Answer any **ten** *questions.*
Each question carries a weight of 1.

Explain the following :

1. Plasmodesmata.
2. RNA interference.
3. Cyclic GMP.
4. Transmembrane proteins.
5. Apoptosis.
6. Oncogene.
7. Pribnow box.
8. Riboswitches.
9. Cadherins.
10. Metastasis.
11. Enhancers.
12. Intermediate filaments.

(10 × 1 = 10 weight)

Section II (Short Essay Type Questions)

Answer any **five** *questions.*
Each question carries a weight of 2.

13. Elucidate the functions of endoplasmic reticulum.
14. Give an account of characteristics of a cancer cell. Comment on genetics of cancer.
15. Explain fluid mosaic model of cell membrane with suitable illustrations.
16. Explain post transcriptional modification of mRNA.
17. Discuss the structure and functions of Microtubules.
18. Explain the role of protein kinase A(PKA) in signal transduction.

Turn over

19. Differentiate Tight junction and Gap junction.

20. Establish *Trp* operon as a repressible operation in *E.coli*.

(5 × 2 = 10 weight)

Section III (Long Essay Type Questions)

Answer any **two** *questions.*
Each question carries a weight of 5.

21. Explain the process of translation in prokaryotes. Point out the differences between prokaryotic and eukaryotic translation.

22. Describe different types of gene regulatory mechanism in eukaryotes.

23. Explain various steps involved in cell cycle. Establish how cell cycle check points acts as a system of sensors in recognize DNA damage and cellular abnormalities.

(2 × 5 = 10 weight)