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Reg. No. :

Name :

Second Semester M.Sc. Degree Examination, July 2019

Branch: Zoology

ZO 223 – CELL BIOLOGY, MOLECULAR BIOLOGY AND BIOINFORMATICS

(2013 Admission Onwards)

Time : 3 Hours

Max. Marks : 75

PART A

I. Write very brief notes on **any ten** of the following. Each question carries **2** marks.

1. Ligand gated ion-channel receptors
2. Nucleosomal histones
3. Lipid rafts
4. DNA gyrase and reverse gyrase
5. MAP kinase phosphatases
6. Constitutive heterochromatin
7. Transmembrane integral proteins
8. GLUT4 transporters
9. CDK inhibitors
10. C-value paradox

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11. Spliceosome
12. Cot value
13. Protein databases
14. DNA twist
15. Role of helicase and primase.

(10 × 2 = 20 marks)

PART B

II. Write short notes on **any six** of the following. Each question carries **4** marks.

16. Rec A and recombinase enzymes
17. Chromatin assembly
18. Sigma factor— role in transcription
19. Promoter sequences
20. DNA reassociation kinetics in relation to complexity
21. Curated databases
22. Membrane potentials
23. Enzyme-linked cell surface receptors
24. web servers and search engines
25. Human genome project

(6 × 4 = 24 marks)



PART C

III Write short essays on **any three** of the following. Each question carries 7 marks.

26. Co-transport by symporters and antiporters.
27. Ras signalling pathway and mutations.
28. Inter and intragenic sequences.
29. Linking number and Writhe.
30. Data retrieval from databases and analyses tools.

(3 × 7 = 21 marks)

PART D

IV Write an essay **on any** one of the following. Each question carries 10 marks.

31. Regulation of cell cycle and its implication in malignant cell.
32. Molecular organisation of DNA in a eukaryotic chromosome.

(1 × 10 = 10 marks)

