Roll No.

B

3020

M.Sc. (Semester I) EXAMINATION, 2018

ZOOLOGY

Second Paper

(Cell and Molecular Biology)

Time allowed : Three hours

Maximum marks : 50

Note : Syllabus of each paper is divided into three units. The question paper is divided into three parts : Part-A, Part-B and Part-C.

Part-A(10 marks) : Part-A is compulsory and contains 10 questions. At least three questions will be set from each unit and each question carries 1 mark (50 words each).

Part-B (10 marks) : Part-B is compulsory and contains five questions, taking at least one question from each unit. Candidate is required to attempt all 5 questions. Each question carries 2 marks (100 words each).

Part-C (30 marks) : 6 questions will be set taking 2 from each unit. Candidate is required to attempt 3 questions, taking 1 from each unit. Each question carries 10 marks (400 words each).

Part-A (Compulsory) 1×10

1. (i) Define illegitimate recombination.

(ii) Name the proteins present in the fibrous corona of kinetochore.

(iii) What is the role of MPF on lamin intermediate filaments ?

(iv) At which point P53 control the cell cycle.

(v) Which type of ATPase is present in Vacuoles ?

(vi) Name the signaling molecules of Receptor Tyrosine Kinases and Non-receptor Tyrosine Kinases.

(vii) Name the hormones (peptide) that not only function as neurotransmitters but also as neurohormones.

(viii) Name the cell adhesion molecules which require Ca^{2+} ?

(ix) What is β-barrel ? Name one β-barrel which can transport Fe^{2+}.

(x) Which phospholipid asymmetry is helpful in detecting apoptotic cell ?

Part-B (Compulsory) 2×5

2. Write short notes on translational Inhibitors.

3. "Glycosylation of protein occurs in Golgi." Explain.

4. Describe chromosomal banding and Paris conference nomenclature.

5. What do you mean by propellar twist ?

6. Explain G-quadruplex ?

Part-C 3×10

Unit-I

7. Describe the role of lipids in forming Biomembranes.

Or

8. Explain Intracellular Protein trafficking.

Unit-II

9. Describe the regulation of cell cycle by CDK-cyclin activity.

Or

10. Describe DNA damage and repair mechanism.

Unit-III

11. Explain somatic cell genetics and its applications.

Or

12. Describe the control of gene expression at transcription level.