

Unique Paper code : 42167902
Name of the paper : Cell and Molecular Biology
Name of the Course : B.Sc. Life Sciences
Semester : V

Duration : 4 Hours (three hours for answering and one hour for downloading of question paper and uploading the PDF of scanned answer sheets as one file)

Maximum Marks: 75

Guidelines to attempt the Question paper

1. Attempt any **Four** Questions.
2. Attempt the Question paper on Numbered A- 4 size sheets.
3. Mention Roll number, Date, UPC and Examination on the top of answer sheet.

1. Differentiate between Light microscopy, Electron microscopy and Fluorescent microscopy with suitable diagrams. (18.75)
2. Write short notes on any **Three**: (18.75)
 - a) Genetic code
 - b) Hershey & Chase Experiment
 - c) Various phases of cell cycle & its significance
 - d) Functions of Golgi apparatus
 - e) Nucleosome
3. a) Draw the well labelled Diagram of Chloroplast and justify the statement that chloroplast is semi-autonomous organelle. (12.75)
b) Explain Freeze fracture technique. (6.00)
4. a) Explain Lac operon model in detail with reference to positive and negative control of gene regulation. (14.75v)
b) Draw the well labelled structure of Lampbrush chromosome. (4.00)
5. a) Mention differences in DNA Replication process of Prokaryotes and Eukaryotes. (12.75)
b) Explain Theta mode of replication. (6.00)
6. a) Discuss about Transcription in Prokaryotes with suitable diagram. (12.00)
b) Draw well labelled diagram of Prokaryotic and Eukaryotic cell. (6.75)

or

Discuss about any one model of cell membrane studied by you with the help of suitable diagrams and mention the function of it. (6.75)