

M.Sc. Semester – I Examination – February 2021

MICROBIOLOGY

Paper: 101 Cytology & Molecular Biology

17 FEB 2021

Paper Code: 23346

Time: 1:30 Hours

Total Marks: 42

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Instructions: (a) Figures to the right indicate total marks of respective questions.  
(b) Draw neat, clean and labeled diagram wherever necessary.  
(c) Attempt ANY THREE questions.

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- Q.1 Discuss: Ultrastructure of cytoskeleton components with their functions in a cell. 14  
OR
- Q.1 (A) Write a note on: Special types of chromosomes. 07
- Q.1 (B) Compare: Glyoxysomes and peroxisomes. 07
- Q.2 Discuss various mechanisms of DNA repair in detail. 14  
OR
- Q.2 (A) Write on: Enzymes which alter DNA topology. 07
- Q.2 (B) Write on: Structural components of DNA polymerase II. 07
- Q.3 Discuss in detail: Technique and instrumentation of NGS. Explain how it is better compared to previous techniques. 14  
OR
- Q.3 (A) Explain how RNA processing differs in prokaryotic and eukaryotic systems. 07
- Q.3 (B) Enlist uses of reverse transcriptase in Molecular Biology. 07
- Q.4 What is an operon? Explain positive and negative regulation of *araBAD*. 14  
OR
- Q.4 (A) Write briefly on: Post translational modifications. 07
- Q.4 (B) Enlist salient features of the genetic code. 07
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