

**FACULTY OF SCIENCE**  
**M. Sc. II – Semester Examination, May / June 2018**

**Subject : Biochemistry**  
**Paper – III**  
**Biochemical Genetics and Model Organisations**

Time : 3 Hours

Max. Marks: 80

Note : Answer all questions from Part-A and Part-B. Each question carries 4 marks in Part-A and 12 marks in Part – B.

**PART – A (8 x 4 = 32 Marks)**  
**(Short Answer Type)**

- 1 Polygenic inheritance.
- 2 Chemical mutagens.
- 3 Ordered tetrad analysis.
- 4 Three-point cross.
- 5 Discovery of transduction.
- 6 Complementation analysis.
- 7 NOD mice.
- 8 Why is *Dictyostelium* a model organism?

**PART – B (4 x 12 = 48 Marks)**  
**(Essay Answer Type)**

- 9 (a) With appropriate examples discuss in detail about the types of mutations.  
OR  
(b) Write a note on: (i) Mendel's laws (ii) Selection of microbial mutants.
- 10 (a) With suitable examples write a note on mobile genetic elements.  
OR  
(b) Give an account on: (a) pedigree analysis (b) generation of knockout cells.
- 11 (a) How do you map[ bacterial genes by interrupted mating experiment? Explain.  
OR  
(b) Write a note on mechanisms of transposition.
- 12 (a) Give an account on significance of *C.elegans* as a model organism to study neural development.  
OR  
(b) Write a note on importance of *Saccharomyces* as a model organism.

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