

This question paper contains 2 printed pages]

**BR—49—2016**

**FACULTY OF SCIENCE**

**M.Sc. (First Year) (Second Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2016**

**(CBCS Pattern)**

**BIOTECHNOLOGY**

**Paper BT-VI**

**(Molecular Genetics)**

**(Thursday, 17-11-2016)**

**Time : 10.00 a.m. to 1.00 p.m.**

*Time—Three Hours*

*Maximum Marks—75*

*N.B. :— (i) All questions are compulsory.*

*(ii) Draw well labelled diagrams wherever necessary.*

1. What is Gene Interaction ? Explain in detail Gene interaction for dihybrid cross. 15

*Or*

(a) Explain in detail Hardy-Weinberg law. 8

(b) Comment on genetic disease due to defects in autosomes. 7

2. Describe in detail genome organization of eukaryotes. 15

*Or*

(a) Explain Renaturation and Denaturation of DNA. 8

(b) Comment on Cot curve and its significance. 7

3. Explain in detail DNA replication in prokaryotes and enzymes involved in it. 15

*Or*

(a) Explain in detail Recombinational repair mechanism. 8

(b) Describe about site-specific recombination. 7

4. Define operon. Explain in detail lac operon and its regulation. 15

*Or*

(a) Explain in brief transcription in prokaryotes. 8

P.T.O.

- (b) Comment on post-translational modifications of proteins. 7
5. Write short notes on any *three* : 15
- (a) Lethal genes
- (b) RNA polymerase
- (c) Genetic code
- (d) Arabinose operon
- (e) Euchromatin.