



B.Sc. (Semester - V) Examination, October/November 2016

**ZOOLOGY**

**Applied Genetics and Evolution**

Duration : 2 Hours

Max. Marks : 80

- Instructions :** 1) Attempt **all** questions.  
2) Figures to the **right** indicate **full** marks.  
3) Draw **neat** labeled diagrams **wherever** necessary.

1. Explain briefly **any four** of the following : 16
- a) Inducible positive control.
  - b) Griffith's experiment.
  - c) Linkage map.
  - d) Familial and Sporadic cancer.
  - e) Sequential and Divergent evolution.
  - f) Applications of Chi-square test.
2. Write brief notes on **any four** of the following : 16
- i) Lactose is not real inducer.
  - ii) Plasmids and its function.
  - iii) Pulse field gel electrophoresis (PFGE).
  - iv) Viral oncogenes (V.Onc).
  - v) Mean and Median.
  - vi) Various kinds of Variation.
3. A) Explain in brief Lac operon mutations. 6
- OR
- A) Discuss the positive and negative regulation in Lac operon. 6
- B) What are Tumour suppressor genes ? How do they check the growth of cancerous cells in normal tissues. 6





4. A) What is Transformation ? Explain O.Avery, Macleod and McCarty's experiment. 6

OR

- A) Describe the mechanism of specialized transduction in bacteria. 6

- B) Briefly explain Correlation and its applications. 6

5. A) What is Genetic map ? Explain about three point test cross with suitable example. 6

OR

- A) Explain in brief In situ hybridization (FISH). 6

- B) Write in brief Hardy-Weinberg law and its applications. 6

6. A) Explain post mating Isolating mechanisms with examples. 6

OR

- A) Discuss natural selection in action with Kettlewell's experiment. 6

- B) What are fossils ? Describe the method for determination of age of fossils. 6