



B.Sc. (Semester – V) Examination, October 2015
ZOOLOGY
Applied Genetics and Evolution

Duration : 2 Hours

Max. Marks : 80

- N.B. :** i) **All questions are compulsory.**
ii) **Figures to the right indicate full marks.**
iii) **Draw neat labelled diagrams wherever necessary.**

1. Discuss in brief **any four** of the following : 16
- a) Organisation of *lac* operon.
 - b) F-factor in *E. Coli*.
 - c) Giemsa (G) Banding.
 - d) Compare Identical and fraternal twins.
 - e) Radio-active Clock method for dating of fossils.
 - f) Mimicry.
2. Write brief notes on **any four** of the following : 16
- i) Griffith's experiment on bacterial transformation.
 - ii) Student's 't' test.
 - iii) Proto-oncogenes
 - iv) Pulse field gel electrophoresis
 - v) Convergent evolution
 - vi) Genetic sources of variation.
3. A) What is Transduction ? Explain the process of generalised transduction. 6
- OR
- A) Give a comparative account of gene regulation in Prokaryotes and Eukaryotes. 6
- B) Write a note on DNA Finger printing. 6
4. A) Discuss Transformation of eukaryote cell. 6
- OR
- A) What is genetic map ? Explain three point test cross with suitable example. 6
- B) What is Retinoblastoma ? Explain Knudson's two hit model for Retinoblastoma. 6



5. A) With a suitable example, explain the mechanism of mega evolution. 6

OR

A) Discuss the different types of natural selection. 6

B) Find the mean and median height of 70 students from the following frequency distribution. 6

Height in cms	150	160	158	155	164	168
Number of students	10	14	8	15	7	16

6. A) What are adaptations ? Briefly explain structural adaptations in animals. 6

OR

A) Define fossils. Discuss the importance of study of fossils. 6

B) Briefly explain types of Isolating mechanisms. 6