



**B.Sc. (Semester – V) Examination, October/November 2018**  
**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 :

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- a) Lac Operon
- b) Structure of bacteriophage
- c) Giemsa (G) Banding
- d) Protooncogenes
- e) Sympatric speciation
- f) Types of fossils.

2. Write brief notes on **any four** of the following :

16

- i) Applications of insitu hybridization
- ii) Restriction fragment length polymorphism
- iii) Correlation analysis and its uses
- iv) Standard deviation
- v) Difference between continuous and discontinuous variations
- vi) Features of mega evolution.

3. A) Briefly explain as to why Lac Operon system is also called as inducible system.

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OR

A) What is transduction ? Explain in brief the process of generalized transduction.

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B) What is a genetic map ? Explain the two point test cross.

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P.T.O.





4. A) What is transformation ? Explain Griffith's experiment in bacterial transformation.

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OR

- A) Explain in brief the technique of fluorescent insitu hybridization.

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- B) Explain Knudson two hit model for Retinoblastoma.

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5. A) Describe directional natural selection.

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OR

- A) Briefly discuss :

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a) Genetic drift

b) Significance of Hardy Weinberg Equilibrium Law.

- B) The following table gives the number of runs scored by 11 players of a cricket team :

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5, 19, 42, 11, 50, 30, 21, 0, 52, 30, 27.

Calculate the Mean, Median and Mode.

6. A) Explain mechanical and physiological isolating mechanisms.

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OR

- A) Briefly discuss convergent evolution.

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- B) Discuss the importance of fossil study.

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