



GV – 40

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

ZOOLOGY

Fundamentals of Animal Biotechnology

Duration : 2 Hours

Total Marks : 80

Instructions : 1) **All questions are compulsory.**

2) **Figures to the right indicate maximum marks to the question.**

3) **Illustrate your answer wherever necessary.**

1. Answer briefly **any four** of the following : 16

- a) Justify biotechnology as being a multidisciplinary subject.
- b) Write a brief note on nutritional types of bacteria.
- c) Give an illustrated account of gene cloning.
- d) Write a note on shuttle vectors.
- e) Enlist the applications of PCR.
- f) What are plasmids ? Add a note on types of plasmids.

2. Answer briefly **any four** of the following : 16

- a) Write a note on genomic library.
- b) What is the role of alkaline phosphatases in genetic engineering ?
- c) State the characteristic features of SV 40 vector.
- d) Explain the technique of electroporation in gene transfer.
- e) Enumerate types of labels used in labelling nucleic acids.
- f) Discuss corrective gene therapy.

3. A) Write an account on reproduction in bacteria. 6

OR

A) Explain the role of DNA ligases in genetic engineering. 6

B) Give a concise account on cosmids and phagemids. 6



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4. A) Explain the forward and backward reaction of polynucleotide kinase and add a note on its applications.

6

OR

- A) Describe the process of gene transfer by retroviral method.

6

- B) Write a note on plaque hybridization.

6

5. A) Discuss the procedure for southern blotting technique.

6

OR

- A) Explain the steps involved in chromosome walking.

6

- B) Describe the primer extension method of labelling nucleic acid.

6

6. A) Write a note on Automatic DNA sequencer.

6

OR

- A) Explain Sanger's method of DNA sequencing.

6

- B) Differentiate between somatic and germ line therapy.

6