



M 6070

Reg. No. : .....

Name : .....

VI Semester B.Sc. Degree (CCSS – Reg./Supple./Improv.)

Examination, May 2014

CORE COURSE IN ZOOLOGY

6B10 ZLG : Genetics, Molecular Biology and Biotechnology

Time: 3 Hours

Max. Weightage: 25

SECTION – A

(Genetics)

I. Answer **any one** : (Weight : 4)

1) Explain various types of gene interactions. Illustrate examples for each.

2) Describe various types of cytoplasmic inheritance. Give suitable examples.

(1×4=4)

II. Answer **any two** :

(Weight : 2)

3) Comment on dominant and recessive epistasis.

4) Give an account on gynandromorphism and sex mosaics.

5) Explain mutation with examples of mutagens.

6) Distinguish between structural and numerical chromosomal aberrations. (2×2=4)

III. Answer **any three** :

(Weight 1 each)

7) Describe mutation theory.

8) What is Erythroblastosis foetalis ?

9) What are Barr bodies ?

10) What is meant by homozygosity ?

11) What are alleles ?

(3×1=3)

IV. Answer the following :

(Weight : 1)

12) a) Inheritance of coat colour in rabbits is an example for \_\_\_\_\_

b) Plumage colour in fowl is an example of \_\_\_\_\_

c) Sex chromosomes are also called \_\_\_\_\_

d) Give an example for polygenic inheritance.

(1×1=1)

P.T.O.



SECTION – B  
(Molecular Biology and Biotechnology)

- V. Answer **any one** : (Weight : 4)
- 13) Write an essay on genetic engineering and its scope for human welfare.
- 14) Illustrate any three experiments to prove DNA as genetic material. Add a note on the role of DNA in heredity. (1×4=4)

- VI. Answer **any two** : (Weight 2 each)
- 15) Differentiate between split gene and overlapping gene.
- 16) Give an account on artificial chromosomes with examples.
- 17) Briefly illustrate any two hybridization techniques.
- 18) Explain Wobble hypothesis. (2×2=4)

- VII. Write short notes on **any four** : (Weight 1 each)
- 19) What is muton ?
- 20) What are jumping genes ?
- 21) Define cloning vectors.
- 22) What are DNA ligases ?
- 23) What do you mean by SOS repair ?
- 24) Comment on reverse transcription.
- 25) What is meant by transcription ? (4×1=4)

VIII. Match the following : (Weight 1)

- |                       |   |                       |         |
|-----------------------|---|-----------------------|---------|
| 26) a) pUC8           | : | HIV                   |         |
| b) BAC                | : | Plasmid               |         |
| c) DNA fingerprinting | : | Helicase              |         |
| d) Retrovirus         | : | Paternity             |         |
|                       | : | Artificial Chromosome | (1×1=1) |
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