

2016

ZOOLOGY

( Major )

Paper : 6.4

Full Marks : 60

Time : 3 hours

*The figures in the margin indicate full marks  
for the questions*

1. Choose the correct answer : 1×4=4

(a) Which of the following is used to join the segments of DNA during genetic engineering?

- (i) Gyrase
- (ii) Lipase
- (iii) Ligase
- (iv) Helicase

(b) Which of the following is a genetic vector?

- (i) Plasmid
- (ii) Phage
- (iii) Cosmid
- (iv) All of the above

- (c) The hub of operating system of UNIX is the
- (i) kernel
  - (ii) GUI
  - (iii) DOS
  - (iv) shell
- (d) Which one of the following is not a statistical computer programme?
- (i) Systort
  - (ii) Statistica
  - (iii) SPSS
  - (iv) Phylip

2. Fill in the blanks :

1×3=3

- (a) \_\_\_\_\_ is an antibody that expresses a catalytic activity.
- (b) The computer operating system which is operated by using the command line is \_\_\_\_\_.
- (c) The technique by which 'Dolly' the sheep was obtained is called cloning by \_\_\_\_\_ transfer.

3. Answer the following : 2×4=8

- (a) Distinguish between genomic library and cDNA library.
- (b) Write briefly on DNA recombinant technology.
- (c) State the specific uses and advantages of slide culture.
- (d) Write a note on genetically engineered microbes(GEMs).

4. Answer any *three* of the following : 5×3=15

- (a) What are molecular probes? How are they prepared? 2+3=5
- (b) Describe different methods of disaggregation of animal tissues as a prerequisite for animal culture. 5
- (c) Give an account of different 'cell type' and 'cell line'. How can a cell line be obtained from a cultured cell? 3+2=5
- (d) Describe different transfection methods used successfully in animals. 5
- (e) Briefly explain computer-aided techniques of data analysis. 5

( 4 )

5. Why is C++ called an object-oriented programming language? What are the advantages of using C++ over other programming languages? 4+6=10

Or

What do you mean by an operating system? Write about the UNIX and Windows operating system. 2+8=10

6. What is gene cloning? Describe the detailed methodology of gene cloning. 2+8=10

Or

Describe the methods of cell culture media preparation for plant cells and animal cells. 5+5=10

7. What is genetic engineering? Explain the roles of different enzymes in various steps of genetic engineering technology. 4+6=10

Or

Write notes on the following : 5×2=10

(a) Northern blotting and Southern blotting

(b) Vectors of genetic engineering

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