

2017

ZOOLOGY

(Major)

Paper : 6.4

(**Biotechnology, Bioinformatics and
Computer Application**)

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) The Polymerase Chain Reaction (PCR)

- (i) is used to transcribe specific genes
- (ii) amplifies specific DNA sequences
- (iii) uses DNA polymerase that denatures at 55 °C
- (iv) is a method for sequencing DNA

(b) Maximum application of animal cell culture technology today is in the production of

- (i) insulin
- (ii) interferons
- (iii) edible proteins
- (iv) vaccines

(c) Restriction enzymes are enzymes

- (i) capable of cutting DNA molecule
- (ii) capable of adding nucleotides to the 3' OH end
- (iii) capable of restricting protein synthesis
- (iv) capable of joining DNA molecules

(d) While working with MS-DOS, which command is used to move file from one directory to another?

- (i) RENAME
- (ii) COPY
- (iii) MOVE
- (iv) CP
- (v) None of the above

2. Fill in the blanks :

1×3=3

(a) In a _____, the base sequence in the second half of a DNA strand is the mirror image of the sequence in its first half.

- (b) Adapters are short, chemically synthesized DNA double strands, which already have one or both _____ ends.
- (c) C++ is a _____ language.

3. Answer the following questions : 2×4=8

- (a) Write the different applications of recombinant DNA technology.
- (b) Write the fundamental features of a genomic library.
- (c) What are the media used for animal tissue culture?
- (d) Write about the different types of plasmid.

4. Answer any *three* of the following questions :

5×3=15

- (a) Write about the properties of a good vector.
- (b) What are disadvantages of transgenic animals?
- (c) Describe about the procedure of cell culture.
- (d) Write about the common features of continuous cell lines.
- (e) Write about the WINDOWS operating system.

5. Define gene
of its meth

What is
construction
application.

6. What is org
techniques
advantages,
organ cultu

Describe the
used in cell
sterilized?

7. What do yo
Write about
system.

What do y
techniques?
presentation

(4)

e cloning. Give a detailed account
odology. $2+8=10$

Or

cDNA? Explain in detail the
n of a cDNA library with its
 $1+7+2=10$

an culture? Describe the various
of organ culture and discuss the
limitations and applications of
res. $1+5+1+1+2=10$

Or

e various types of culture media
culture. How are the cell cultures
 $7+3=10$

ou mean by operating system?
the DOS and UNIX operating
 $2+8=10$

Or

ou mean by computer-aided
Describe about the data
and data analysis techniques.
 $2+8=10$

★ ★ ★