

2015

(6th Semester)

ZOOLOGY

Paper : ZL-XII A

(Biotechnology and Bioinformatics)

Full Marks : 55

Time : 2½ hours

(PART : B—DESCRIPTIVE)

(Marks : 35)

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

1. Explain DNA fingerprinting. Discuss the principle and application of DNA fingerprinting. 2+5=7

Or

Write a note on Western blot technique. 7

2. Give an account of genetic engineering. 7

Or

Write short notes on the following : $3\frac{1}{2}+3\frac{1}{2}=7$

(a) Restriction enzyme

(b) DNA ligase

3. Describe the applications of genetic engineering in agriculture. 7

Or

Write short notes on the following : $3\frac{1}{2}+3\frac{1}{2}=7$

(a) Gene therapy

(b) Gene library

4. What is bioinformatics? Give an account of the application of bioinformatics. $2+5=7$

Or

Write short notes on the following : $3\frac{1}{2}+3\frac{1}{2}=7$

(a) Internet for biologists

(b) Basic operating system

5. What is EMBL? Write a brief account on EMBL applications in database. 7

Or

Write short notes on the following : $3\frac{1}{2}+3\frac{1}{2}=7$

(a) Proteomics database

(b) BLAST

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ZOOLOGY

Paper : ZL-XII A

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(PART : A—OBJECTIVE)

(Marks : 20)

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SECTION—A

(Marks : 5)

1. Put a Tick (✓) mark against the correct answer in the corresponding brackets : 1×5=5

(a) The analytical technique used to detect specific proteins in a sample of tissue homogenate or extract is

(i) Southern blotting ()

(ii) Northern blotting ()

(iii) Eastern blotting ()

(iv) Western blotting ()

(b) EcoRI restriction enzyme cleavage produces

- (i) blunt end ()
- (ii) sticky end ()
- (iii) both blunt and sticky end ()
- (iv) None of the above ()

(c) Which of the following cuts the DNA from specific places?

- (i) *E. coli* restriction endonuclease II ()
- (ii) DNA ligase ()
- (iii) Exonuclease ()
- (iv) Alkaline phosphatase ()

(d) Database retrieval tools are

(i) ENTREZ , BROWSER, LOCUS
LINK ()

(ii) FTP, HTTP, WWW ()

(iii) PDF, IP, LINUX ()

(iv) UNIX, Crystal Report, C++ ()

(e) The full form of BLAST is

(i) Basic Local Alignment Search Tools ()

(ii) Basic Logarithm Alignment Search
Tools ()

(iii) Basic Logical Algorithm Secondary
Tools ()

(iv) None of the above ()

(4)

SECTION—B

(Marks : 15)

2. Write short notes on the following in 5 to 8 sentences each :

3×5=15

(a) PCR

(5)

(b) Reporter gene

(c) Genetic engineering in medicine

(d) Information retrieval

(e) Importance of NCBI

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