2 0 1 7

(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. What is DNA fingerprinting? Describe the process and applications of DNA finger-printing.　　　　　　1+(3+3)=7

Or

Write short notes on the following :　3½+3½=7

(a) Southern blotting

(b) Applications of PCR

2. Elucidate, with appropriate diagrams, the basic steps involved in gene cloning.　　7

Or

Write short notes on the following :　3½+3½=7

(a) Taq polymerase

(b) Vectors in genetic engineering

3. Write a note on the important applications of genetic engineering in medicine.　　7

Or

Write short notes on the following :　3½+3½=7

(a) cDNA library

(b) Somatic gene therapy

4. Define 'bioinformatics'. What are the applications of bioinformatics?　2+5=7

Or

Write short notes on the following :　3½+3½=7

(a) Importance of Internet for biologists

(b) Steps in information retrieval

(3)

5. Define 'database'. Explain different types of database in bioinformatics. 2+5=7

Or

Write short notes on the following : 3½+3½=7

(a) BLAST

(b) EMBL

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Subject Code : ZOO/VI/12 (a)

Booklet No. A

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce /
......................) Exam., **2017**

Subject ....

Paper ....

INSTRUCTIONS TO CANDIDATES

1. **The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**

2. **This paper should be ANSWERED FIRST and submitted within** *45 minutes* **of the commencement of the Examination.**

3. **While answering the questions of this booklet, any cutting, erasing, over-writing or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

To be filled in by the Candidate

DEGREE 6th Semester

(Arts / Science / Commerce /
......................) Exam., **2017**

Roll No. ....

Regn. No. ....

Subject ....

Paper ....

Descriptive Type

Booklet No. B ....

/433

2 0 1 7

(6th Semester)

ZOOLOGY

Paper : ZL–XII (A)

(Biotechnology and Bioinformatics)

(PART : A—OBJECTIVE)

(*Marks* : 20)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks* : 5)

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

   (a) Western blotting is the detection and isolation of

     (i) DNA   (   )

     (ii) protein   (   )

     (iii) RNA   (   )

     (iv) cells   (   )

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(b) Enzymes used for joining of DNA fragments are called

   (i) helicase   ( )

  (ii) ligase   ( )

 (iii) polymerase   ( )

 (iv) Klenow fragment   ( )

(c) Gene library is defined as

   (i) collection of genomic DNA from different species   ( )

  (ii) collection of total DNA of the whole organism   ( )

 (iii) collection of reverse transcribed DNA   ( )

 (iv) collection of all nucleic acids   ( )

(d) The main purpose of operating system is

    (i) to provide an environment for development and execution of programs   (   )

    (ii) to manage computational activities of a computer system   (   )

    (iii) Both *(i)* and *(ii)*   (   )

    (iv) None of the above   (   )

(e) NCBI is an Internet database of

    (i) proteins   (   )

    (ii) DNA   (   )

    (iii) RNA   (   )

    (iv) enzymes   (   )

(4)

SECTION—B

(*Marks* : 15)

2. Write short notes on the following in *5* to *8* sentences each : 3×5=15

(a) Northern blotting

(b) Restriction enzymes

(c) Basic operating systems

(d) Gene library

    (e) Difference between genome and proteome database

★★★