

2 0 1 6

(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. Write an account of the principle and applications of PCR. 3+4=7

Or

Describe the process of genome sequencing. 7

2. Write an account of the concept of gene cloning. 7

Or

Point out the role of restriction enzymes and reporter gene in genetic engineering. $3\frac{1}{2}+3\frac{1}{2}=7$

3. Give a brief account of the applications of genetic engineering in medicine. 7

Or

What is gene therapy? Write the process and applications of gene therapy. 1+6=7

4. Write an account of basic operating systems. 7

Or

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

(a) Databases

(b) Role of bioinformatics

5. What is NCBI? Write a note on NCBI applications in database. 1+6=7

Or

Differentiate between genome and proteome databases. Give a brief overview of BLAST. 2+5=7

★ ★ ★

Subject Code : ZOO/VI/12 (a)

Booklet No. A

Date Stamp

.....

To be filled in by the Candidate

DEGREE 6th Semester
(Arts / Science / Commerce /
.....) Exam., **2016**

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., **2016**

Roll No.

Regn. No.

Subject

Paper

Descriptive Type

Booklet No. B

*Signature of
Scrutiniser(s)*

*Signature of
Examiner(s)*

*Signature of
Invigilator(s)*

/349

ZOO/VI/12 (a)

2 0 1 6

(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) DNA fingerprinting relies on

- (i) difference in patterns of genes between individuals ()
- (ii) difference in order of genes between individuals ()
- (iii) difference in junk DNA patterns between individuals ()
- (iv) All of the above ()

(2)

(b) Which vector can be used to clone large DNA fragments?

(i) Yeast artificial chromosome (YAC) ()

(ii) Bacteriophage lambda ()

(iii) Plasmids ()

(iv) Cosmids ()

(c) Gene therapy is a technique to cure inherited diseases by

(i) repairing the faulty genes ()

(ii) introducing the correct copy of the gene ()

(iii) adding new copies of the gene ()

(iv) All of the above ()

ZOO/VI/12 (a)/349

(3)

(d) _____ is the activity of obtaining information resources relevant to an information from a collection of information resources.

(i) Database ()

(ii) Information retrieval ()

(iii) Web search engine ()

(iv) Public library ()

(e) European Molecular Biology Laboratory (EMBL) mainly deals with

(i) genome sequence ()

(ii) protein sequence ()

(iii) nucleotide sequence ()

(iv) amino acid sequence ()

(4)

SECTION—B

(Marks : 15)

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

(a) Southern blotting

(5)

(b) DNA ligase

ZOO/VI/12 (a)/**349**

(6)

(c) Gene library

ZOO/VI/12 (a)/**349**

(7)

(d) Internet for biologists

(8)

(e) Internet tools

★ ★ ★

G16—200/**349**

ZOO/VI/12 (a)