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6 SEM TDC ZOO M 4

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(May)

ZOOLOGY

(Major)

Course : 604

(Biotechnology and Bioinformatics)

Full Marks : 48

Pass Marks : 19

Time : 2 hours

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

Answer Question No. **1** and *any three* from the rest

**1. (a) Choose and write the correct answer for
the following :** 1×3=3

- (i) HTML/FTP/SMTP/HTTP is used to assess data using www.
- (ii) FASTA is a DNA and RNA/DNA and protein/RNA and protein sequence alignment software package.
- (iii) The biological tool of genetic engineering linkers contains target sites for the action of one/one or two/one or more restriction enzymes.

(b) Fill in the blanks : 1×2=2

(i) The first somatic hybrid between *Nicotiana glauca* and *N.* _____ was achieved by P. S. Carlson *et al* (1972).

(ii) _____ compares an amino acid query sequence against protein sequence database.

(c) Write short notes on the following : 3½×2=7

(i) Cloning vectors

(ii) Scope of bioinformatics

2. What is genetic engineering? Describe briefly the application of genetic engineering in medicine and agriculture. 2+5+5=12

3. What is human genome project? Write the salient goals of human genome project. Give an account of the application and future challenges of human genome project. 2+5+5=12

4. What are genomics and proteomics? Write briefly role of internet in bioinformatics. 3+3+6=12

5. What is phylogenetic analysis? Describe the steps in evaluation of phylogeny and constructing phylogenetic trees. 2+5+5=12

(3)

6. Write short notes on any *three* of the following : 4×3=12

(a) Primary and secondary databases

(b) Transgenic animals

(c) DNA sequencing

(d) BLAST

(e) IPR
