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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) Fill in the blanks : 1×5=5

- (i) Molecular scissor which cut DNA at specific site is —.
- (ii) The DNA fragment to be introduced into the host cell is called —.
- (iii) During gene cloning, — is called 'gene taxi'.
- (iv) Humuline is the term used for —.
- (v) The primary structure database include PDB and —.

- (b) Write short notes on : $3\frac{1}{2}+3\frac{1}{2}=7$
- (i) IPR
 - (ii) Cloning vector
2. Define genetic engineering. Write a detailed note on the process of synthesis and application of recombinant DNA. $2+(5+5)=12$
3. What are transgenic animals? How are transgenic animals produced? Discuss the application of transgenic animals. $2+5+5=12$
4. What is bioinformatics? Mention the scope of bioinformatics. What are the sources of information used in bioinformatics? $2+5+5=12$
5. What is biological database? Give the sequence found in database. Write the methods of sequence alignment. $2+5+5=12$
6. Write notes on (any three) : $4\times 3=12$
- (a) BLAST
 - (b) Human genome project
 - (c) DNA sequencing
 - (d) Proteomics

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