

**2019**

( May )

**ZOOLOGY**

( Major )

Course : 604

**( Biotechnology and Bioinformatics )**

*Full Marks : 48*

*Pass Marks : 19/14*

*Time : 2 hours*

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

1. Choose and write the correct answer for the following : 1×4=4

(a) The complete set of mRNA in an organism is called as

(i) transcriptome

(ii) metabolome

(iii) genome

(iv) nucleome

- (b) Biological database contains
- (i) DNA
  - (ii) protein
  - (iii) structure
  - (iv) All of the above
- (c) SWISS-PROT is a
- (i) database of nucleic acid
  - (ii) database of structures
  - (iii) database of protein sequences
  - (iv) None of the above
- (d) BLAST stands for
- (i) Basic Local Analysis Search Tool
  - (ii) Basic Local Analysis Seek Tool
  - (iii) Basic Local Alignment Search Tool
  - (iv) Basic Local Alignment Seek Tool

2. What does it mean by protoplast fusion or somatic hybridization technique? Write with suitable examples, the techniques of protoplast fusion. 2+7=9

3. What is bioethics? Compare the advantages and disadvantages of genetically modified organisms. 3+6=9

4. Write the salient features of Human Genome Project. Describe the applications and future challenges of HGP.  $4+2\frac{1}{2}+2\frac{1}{2}=9$
5. What is ENTREZ? How is it related to NCBI? Write about the major functions of NCBI associated databases.  $2+3+4=9$
6. What do you mean by sequences alignment? Write about the methods of sequence alignment.  $2+6=8$

Or

Write short notes on the following :  $4 \times 2 = 8$

(a) FASTA

(b) Phylogenic tree

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