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**6 SEM TDC ZOO M 4**

**2017**

( May )

**ZOOLOGY**

( Major )

Course : 604

**( Biotechnology and Bioinformatics )**

Full Marks : 48

Pass Marks : 14/19

Time : 2 hours

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

1. (a) Choose the correct answer :  $1 \times 3 = 3$

(i) Cutting certain genes out of molecules of DNA requires the use of special

1. degrading nucleases
2. restriction endonucleases
3. eukaryotic enzymes
4. viral enzymes

(ii) Which of the following cannot be used as a vector?

1. Phage
2. Plasmid
3. Bacterium
4. All of the above

(iii) The enzyme used in the polymerase chain reaction is

1. restriction endonuclease
2. reverse transcriptase
3. DNA polymerase
4. RNA polymerase

(b) (i) What is the full form of NCBI? 1

(ii) What is HTML? 1

(c) Write short notes on any two of the following :  $3\frac{1}{2} \times 2 = 7$

(i) Biological database

(ii) The concept of human genome project

(iii) Structural genomics

(iv) Proteomics

2. What do you mean by protoplast fusion or somatic hybridization technique? Write the methods of protoplast fusion.  $2+7=9$

( 3 )

Or

Give an account about industrial biotechnology used for production of alcohol. 9

3. What are transgenic animals? Discuss the application of transgenic animals. 2+7=9

Or

Write an account on ethical issues related to biotechnology. 9

4. What are primary and secondary databases? Give an account on nucleic acid or protein sequence database. 2+2+5=9
5. What do you mean by sequence alignment? Write about the methods of sequence alignment. 2+7=9

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