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UG/II/BIOT/H/IV/16 (Old)

2016

**BIOTECHNOLOGY**

[ Honours ]

PAPER – IV

Full Marks : 90

Time : 4 hours

*The figures in the right hand margin indicate marks  
Candidates are required to give their answers in their  
own words as far as practicable*

*Illustrate the answers wherever necessary*

[ OLD SYLLABUS ]

GROUP – A

Answer any two questions from the following :

15 x 2

1. (a) What is standard deviation ? State the importance of computing standard deviation.

( Turn Over )

(b) Find out standard deviation of the following heights (cm) of 10 persons :

162, 161, 155, 160, 160, 159, 158, 157, 160, 161

(c) What is mean deviation ?  $(2+4)+7+2$

2. (a) What is meant by 'High Level Programming Language' ?

(b) Classify High-level Programming Language on the basis of their intrinsic features. Give example for each group.

(c) Write the characteristics of different generations of computer.  $4 + (5 + 2) + 4$

3. (a) Explain operating system with examples.

(b) What is meant by bioinformatics ? Write down - the different applications of bioinformatics.

(c) Write the use of BLAST in DNA sequence alignment.  $5 + (1 + 3) + 6$

4. (a) What is gene bank ? 3
- (b) What is unices ? Point out the advantages of Unix-lik open source operating systems over windows operating system.  $1\frac{1}{2} + 3$
- (c) Comment on the following (any *three*):  $2\frac{1}{2} \times 3$
- (i) Primary databases in Bioinformatics
  - (ii) Open Access journal on Bioinformatics
  - (iii) SWISS-PROT
  - (iv) Pub Med
  - (v) CINEMA as Bioinformatics tool.

**GROUP – B**

Answer any five questions from the following :

$8 \times 5$

5. What is linear regression ? How do you compute simple linear regression ?  $2 + 6$
6. Write about different types of biological databases. State the use of Entrez.  $5 + 3$
7. (a) State the function of scroll bars in MS-Word.

- (b) State the differences between "Save" and "Save as" option in MS Word.
- (c) What is 'Undo' function? 2+4+2
8. (a) What do you mean by CGI ?
- (b) Explain the working principle of CGI with illustration. 2 + 6
9. (a) What is UR4 ? Explain its various components with example.
- (b) Discuss different types of web searching tools with example. 3 + 5
10. (a) What do you mean by work book and work sheet of MS Excel ?
- (b) How do you make a chart in MS Excel ? 3 + 5
11. (a) What do you mean by LAN and WAN ?
- (b) Write the components of internet.
- (c) What is FTP ? 3 + 3 + 2

12. Write short notes on any *two* of the following :  $4 \times 2$

- (i) Pivot table in spread sheet
- (ii) Macro in word processing
- (iii) Gene databases
- (iv) PHP as scripting language.

GROUP – C

Answer any **five** questions from the following :

$4 \times 5$

13. State the basic principle of polyacrylamide gel electrophoresis (PAGE). Mention its application.  $2+2$
14. State Beer-Lambert's law. What are the applications and limitations of this law?  $1+3$
15. What are the differences between light and electron microscope? What is PH?  $3+1$
16. Write the principle and application of NMR.  $4$
17. What do you mean by IPR? Mention the components of a IPR framework.  $1+3$

18. State the advantages of commercializing biotechnology in present market condition. 4
19. Describe the recommendation of WTO in relation with genetically engineered food product. 4
20. What is buffer ? Give example of any two buffering system. 2 + 2
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