

Total Pages—6

UG/II/BIOT/H/IV/17(Old)

2017

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 × 2

- 1. (a) What is normal distribution ? State the properties of normal distribution. What is meant by best-fitting normal distribution ?**

2+5+2

(Turn Over)

- (b) What do you mean by positive and negative correlation ? State this properties of linear correlation. $2+2+2$
2. (a) Compute the SD of following body weight (kg) of 8 individuals 6
60, 72, 65, 68, 55, 61, 52, 48.
- (b) What is random sampling ? What do you mean by sampling bias ? What is Poisson distribution ? State simple properties of Poisson distribution. $2+2+2+3$
3. (a) What do you mean by 'High level' language ? Classify 'High level language' on the basis of their intrinsic features. $2+5$
- (b) Write computer programme to find the lowest value of serum protein of 10 given samples. What is asssembly language ? $6+2$
4. (a) What do you mean by Silicon Biology ? State the objectives of the discipline Bioinformatics. $2+3$

- (b) Comment on the features of *four* of the following: $2\frac{1}{2} \times 4$
- (i) Human genome project
 - (ii) BLAST
 - (iii) FASTA
 - (iv) Use of PERL in Bioinformatics
 - (v) Cite U-like as citation data source
 - (vi) Secondary data bars in Bioinformatics.

GROUP – B

Answer any five questions from the following : 8×5

5. What are components of internet ? What do you mean by search engine ? What is FTP ? $3 + 3 + 2$
6. What is W.W.W. ? How do you retrieve information on a specific topic in biology ? What is URL ? $2 + 5 + 1$
7. (a) What do you mean by CGI ?
- (b) Explain the working principle of CGI with illustration. $2 + 6$

8. (a) What is firewall ? What are the differences between a firewall and antivirus ?
- (b) What is digital signature ?
- (c) What is remote login ? $(2 + 2) + (2 + 2)$
9. Comment on any *two* of the following : 4×2
- (i) Spread Sheet
- (ii) Biological database
- (iii) Optical and magnetic storage
- (iv) Objective oriented programming language
- (v) TCP/IP.
10. (a) What is "ab-initio" protein structure prediction ?
- (b) What is homology modelling ? $4 + 4$
11. What is mail merging ? Explain the steps of mail merging in any word processing software known to you . $2 + 6$

12. (a) What is object-oriented programming language?

(b) State the role of Macro in word processing. 4 + 4

GROUP – C

Answer any five questions from the following : 4 × 5

13. Write the principle of Agarose gel electrophoresis. Mention its application. 4
14. What will be qualities of CEO of a company? 4
15. Briefly discuss the process of organisational communication. 4
16. State the application of affinity chromatography. 4
17. Write the basic principle of two dimensional electrophoresis. 4
18. State the principle of ultracentrifugation. 4
19. Describe the recommendation of WTO in relation to the genetically engineered food product. 4

(6)

20. Write the full form of TLC. What do you mean by column dead space? What are major applications of gas chromatography? 1 + 1 + 2
-