

2015

M.Sc.

2nd Semester Examination

MICROBIOLOGY

PAPER—MCB-204

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer any two questions from each group.

Group — A

[Marks : 20]

Answer any two questions.

1. (a) Define an operating system.
(b) What are the objectives of operating system? Draw the layers of the computer system.

(Turn Over)

- (c) What are the services provided by the operating system ?
- (d) Describe different types of the operating system with example. 1+3+3+3
2. (a) Briefly describe the different generation of the computer system.
- (b) Describe the working function of the different components of the computer system.
- (c) What is task bar in Microsoft Windows ?
- (d) What is start Menu in Microsoft Windows ? 4+4+1+1
3. (a) Write a C-program to add 3 and 4.5. Display the result as 7.5.
- (b) What is pre processor commands ? Describe briefly different parts of a C-program.
- (c) What are Data types in C-language ? Describe any two with example.
- (d) What is firewall ? 4+3+2+1

Group — B**[Marks : 20]**

4. (a) What are the application of Bioinformatics in Biological science ?
- (b) Give example of two protein and nucleotide sequence database.
- (c) What are the situations to use local and global alignment ?
- (d) Define : gap opening & extension penalty.
 $3+(1+1)+(1+1)+(1+2)$
5. Write down the algorithm followed in the development of BLAST tool. What is the significance of e-value ?
8+2
6. (a) What are the importances of Multiple sequence alignment ?
- (b) What is molecular clock hypothesis. What is UPGMA ?
- (c) How many rooted and unrooted trees are possible from 7 taxas ?

- (d) Write down about importance of substitution matrix. To evaluate at the time of comparison of two distantly related sequence, which series of PAM & Blosum will be suitable to use?

$$2+(1+1)+(1+1)+(2+2)$$