BB-294

M. Sc. EXAMINATION, May 2017

(Second Semester)

(Main & Re-appear)

CH-508-B

CHEMISTRY

Computer for Chemists

Time : 3 *Hours*]   [*Maximum Marks :* 70

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Explain the various functional components of a digital computer. **7**

(b) What do you mean by operating system ? Explain the disc operating system in brief. **7**

2. (a) Convert the following : **10**

(i) $(101011)_2$ from binary to decimal.

(ii) $(10111)_2$ from binary to hexadecimal.

(iii) $(245)_8$ from octal number system to binary number system.

(iv) $(236)_{10}$ from decimal to hexadecimal.

(b) Write an algorithm to find the multiplication of a matrix. **4**

3. What is an algorithm ? Explain linear, binary search and bubble sort algorithms giving suitable example. **14**

Unit II

4. (a) Explain brief structure of C programming. **4**

(b) What are variables ? What are the rules for defining variables ? **6**

(c) Explain various types of data types used C language. **4**

5. (a) Explain the following functions in C :
(i) getch()
(ii) clrscr(). **4**

(b) Write a program in C to read two matrices and add them. **10**

6. What are arrays ? Write a program in 'C' explaining the usage of one-dimensional array. **14**

Unit III

7. Write a program to calculate the bond length of molecule. **14**

8. Write a program to find radioactive decay for a molecule. **14**

9. Write a program in 'C' to calculate the rate constant for a 3rd order reaction. **14**