

YMCA UNIVERSITY OF SCIENCE & TECHNOLOGY, FARIDABAD

M.Sc. Chemistry, 2<sup>nd</sup> SEMESTER (UNDER CBS)

Computational Techniques (CH 204)

Time: 3 Hours

Max. Marks: 60

- Note: 1. It is compulsory to answer the questions of Part -1. Limit your answers within 20-40 word in this part.  
2. Answer any four questions from Part -2 in detail.  
3. Different parts of the same question are to be attempted adjacent to each other.

**PART -1**

- Q1 (a) State four arithmetic operators and four logical operators in C. (2)  
(b) What is a pointer variable? (2)  
(c) Define conditional probability. (2)  
(d) What is the purpose of break statement? (2)  
(e) What is the meaning of declaration `int *ptr`? (2)  
(f) What are equally likely events? (2)  
(g) Mean marks of 150 students were found to be 50. Later it was found that a score of 87 was misread as 78. What is the correct mean? (2)  
(h) Give any 2 two differences between Structures & Union. (2)  
(i) Define addition theorem of two events in probability. (2)  
(j) What are preprocessor directives? (2)

**PART -2**

- Q2 (a) What is the median of the following ungrouped data? (5)  
Salary (in Rs): 150 100 80 200 130  
No. of workers: 24 70 40 15 10  
(b) Define mean deviation about mean. Show that standard deviation is not less than mean deviation about mean, for any discrete distribution. (5)
- Q3 (a) Explain the storage classes in C with example. (5)  
(b) Explain the concept of array of pointers with example. (5)
- Q4 (a) What is the difference between while and do-while loop structures? Write a program using array to read the ten integer numbers and find the counts for number of positive and negative numbers. (5)  
(b) Explain the use of pointers in call by reference parameter passing for functions. (5)
- Q5 (a) Explain the terms character set, tokens, constant and variables. (5)  
(b) Explain the different kinds of loops available in C with examples. (5)
- Q6 (a) Explain four string handling functions. (5)  
(b) Write a function to exchange the values of two variables, say x and y. (5)
- Q7 (a) State and establish Bayes theorem for a finite number of events. (5)  
(b) 0.5% of population of a city is suffering from a particular disease. A person suffering from this disease has 95% chances to be tested as positive. The chance for a wrong positive test result is 1%. What is the chance for a person actually to have the disease, if that person is tested positive? (5)

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