

--	--	--	--	--	--	--	--	--	--

**M. C. A.**  
**(SEM I) ODD SEMESTER EXAMINATION 2015-16**  
**Computer Concepts and Programming in C**

Time: 3 Hrs.

MM: 100

NOTE: Attempt all questions. Marks are indicated against each questions/parts.

**Q1 Attempt any TWO parts of the following: (10 X 2 = 20)**

- (a) What do you mean by computer? What are the various components of a computer? Discuss various types of computers.
- (b) Write a program in C to multiply two matrixes A and B of size 4X4. Also give the algorithm for the same.
- (c) Write short notes on the following:
  - (i) Step wise refinement.
  - (ii) Types of operating systems.
- (d) Write a program in C to create a database of students of your class using structure. Make suitable assumptions yourself.

**Q2 Attempt any TWO parts of the following: (10 X 2 = 20)**

- (a) Suppose in a subject six grades as follows:  $A \geq 90$ ,  $80 \leq B < 90$ ,  $70 \leq C < 80$ ,  $60 \leq D < 70$ ,  $50 \leq E < 60$ ,  $F < 50$ . Write a program in C to accept the marks of 10 students and print their grades for the same using switch statement. Also give the number of students who have obtained A grade.
- (b) What do you understand by parameter passing mechanism? Explain. Given an integer number  $k$ , write a function in C to find the total of the digits of the number. For example if  $k=234$  then the function should return 9.
- (c) Answer the following parts:
  - (i) Discuss various control statements in C.
  - (ii) Make a flow chart to add the first 20 integers.

**Q3 Attempt any TWO parts of the following: (10 X 2 = 20)**

- (a) Two matrixes A (3X3) and B (3X3) of real numbers are given. Write a program in C to multiply these two matrixes and place the result in matrix C.
- (b) Write a program in C to calculate the frequency of vowels words in a given statement. Make suitable assumptions yourself.
- (c) Write a program in C to copy the contents of a already created text file to another text file and also give the total count of characters.

**Q4 Attempt any TWO parts of the following: (10 X 2 = 20)**

- (a) Discuss the various storage classes in C. Also explain their applications together with suitable examples.
- (b) Write a program in C to store the record of the students in a class with their academic performance. Display the names of those students who have secured more than 70% marks. [Make suitable assumption yourself].
- (c) What do understand by object oriented method? Discuss various concepts associated with object oriented methodology.

**Q5 Write short notes on any FOUR of the following:**

**(5 X 4 = 20)**

- (a) Dynamic memory allocation and its significance.
- (b) Pointer arithmetic.
- (c) Various data types in C.
- (d) Various generations of Computers.
- (e) Data type modifiers and data type qualifiers.
- (f) Multi-dimensional array of integers.