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MCA Integrated

(SEM II) THEORY EXAMINATION 2017-18

ADVANCE PROGRAMMING IN C

Time: 3 Hours *Total Marks: 70*

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 7 = 14

a. Define void pointer and null pointer with example.
b. What is a string? Explain any three string functions.
c. Define and compare malloc, calloc and realloc library functions.
d. What do you understand by array of pointers? Explain.
e. Briefly explain nested structures with example.
f. Why fopen( ), fclose( ) and fgets( ) functions are used?
g. What are the two forms of #include directive? Explain.

SECTION B

2. Attempt any *three* of the following: 7 x 3 = 21

a. Write a program to perform addition of two 3x3 matrices.
b. What is the difference between a pointer variable and an ordinary variable? How a variable's address and variable's value can be accessed using pointer? Explain.
c. What do you understand by a union? Explain how members of a union are accessed using a program.
d. Why do we need to store data in files? Explain. Differentiate between a text file and a binary file.
e. What are the advantages of using macro definitions in a program? Define a macro PRINT_VALUE to print two values of arbitrary type.

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7

(a) Write a program to count the total number of digits, characters and words in a given text.
(b) How one-dimensional, two-dimensional and multi-dimensional arrays are defined and represented in memory? Explain.

4. Attempt any *one* part of the following: 7 x 1 = 7

(a) Write a program to add and subtract two integers using functions. Use call-by-address technique of passing parameters.
(b) Explain how pointer variables can be used to access strings. Write a program to reverse a string using pointer.

5. Attempt any *one* part of the following: 7 x 1 = 7

(a) Define a structure to store and display name, address, age, date of birth and marks of three subjects (English, Mathematics and Computer Science) of students.
(b) How does an array of structure is created? Explain with the help of a program.

6. **Attempt any *one* part of the following:** **7 x 1 = 7**

(a) What is meant by bitwise operators? Discuss the three logical bitwise operators with example.

(b) Write a program to copy one file into another. Copy one character at a time.

7. **Attempt any *one* part of the following:** **7 x 1 = 7**

(a) Discuss any three functions used in drawing in C language.

(b) What is a preprocessor directive? Discuss various preprocessor directives with suitable example.