

Paper Code: MCA-113

Roll No.

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MCA
FIFTH SEMESTER EXAMINATION, 2016-2017
COMPUTER CONCEPTS AND PROGRAMMING

[Time: 3 Hours]

[Total Marks: 100]

Note: Attempt *ALL* questions. Assume suitable data, if required. All question carry equal marks.

1. Attempt all questions: -

[2x10=20]

- (a) What is digital computer?
- (b) Differentiate between application software and system software.
- (c) Why Operating system is important for computer?
- (d) Name any two versions of android.
- (e) Write down the advantages and disadvantages of flowchart.
- (f) $(1011011)_2 + (0010010)_2 = (?)_{16}$
- (g) $(21.5)_{10} = (?)_2$
- (h) Write down the purpose of linker and loader.
- (i) What is the role of compiler after writing a program?
- (j) Why is it important to understand the problem before writing a program? Explain with the help of example.

2. Attempt any five parts.

[3x5=15]

- (a) What are the different types of operators in C? Explain with example.
- (b) Write a program to find the area of a triangle using the following formula:

$$\text{Area of triangle} = (s*(s-a)*(s-b)*(s-c))^{1/2}$$
- (c) What is the purpose of header files? Name any two header files
- (d) Write a program to calculate the sum of n numbers. Where n is integer.
- (e) Differentiate between while and do while loops.
- (f) Write a program to print the ASCII value of a character.

3. Attempt any five parts: -

[5x5=25]

- (a) Write a program in C to print the following series”
 $1/1 + 2/2 + 3/3 + \dots$ up to n terms. Input any integer value for n.
- (b) Write a program to demonstrate the use of break and continue statements.
- (c) What is a recursive function? Write a recursive function to find the value of factorial n.
- (d) Differentiate between call by value and call by reference parameter passing techniques. Give examples in support your answer.
- (e) What is structure? What is the purpose and syntax of structure?
- (f) Write down the name, syntax and purpose of four string functions.

4. Attempt any two parts: -

[10 x 2=20]

- (a) Write a program to read and display values of an integer array a [10].
- (b) Write a program to demonstrate the use of nested if structure.
- (c) Write a program to enter a number from 1 to 7 and display the corresponding day of the week using switch case statement.

5. Write short notes on any two of the followings:

[10 x 2=20]

- (a) Pointer in C
- (b) Encapsulation
- (c) Polymorphism