

(Following Paper ID and Roll No. to be filled in your Answer Book)

Paper ID : 110101

Roll No.

**B.TECH.**

**(SEM. I) THEORY EXAMINATION, 2015-16**

**COMPUTER PROGRAMMING**

**[Time:3 hours]**

**[Total Marks:100]**

**SECTION-A**

1. Attempt all parts . All parts carry equal marks. Write answer of each part in short . **(2×10=20)**
- (a) What do you mean by recursion?
  - (b) List various functions of an operating system.
  - (c) Differentiate between compiler and linker.
  - (d) Why 'C' programming is called structured programming?
  - (e) Explain struct with suitable example.
  - (f) Write a function in C to exchange the content of two integer variables without using a third variable.
  - (g) What is an algorithm? Discuss basic characteristics of an algorithm.

- (h) Differentiate between machine language & high level language.
- (i) What do you understand by mixed operands? Explain.
- (j) What is the meaning of the prototype of a function?

### SECTION-B

Attempt any **five** questions from this section.

(10x5=50)

- 2. Simulate calculator using switch statement.
- 3. Write a program in C to print the following  
A  
BA  
ABA  
BABA  
ABABA
- 4. Explain the following with example:
  - (i) Relational operators.
  - (ii) Top-down program development
- 5. Differentiate between while and do-while loop. Write a program in 'C' and draw flow chart to find whether a given number is prime or not.

- 6. How macros are defined & called inc? Explain.
- 7. What do you mean by sorting? Write a program to sort the given n positive integers.
- 8. Write short notes on
  - (i) Linux and windows
  - (ii) Pointer arithmetic
- 9. Explain with example, the syntax and usage of the following in C program.
  - (i) Operator precedence
  - (ii) Array of structures

### SECTION-C

Attempt **any two** questions from this section. (15x2=30)

- 10. (a) Explain logical and bitwise operators with the help of suitable example.
- (b) Write a C program to multiply two matrices. Take the size and elements of matrices from the keyboard.
- (c) What are the types of function? Write a C program to find the factorial of a given number using recursion .

11. (a) Define data types in C. Discuss primitive data types in terms of memory size, format specifier and range.
- (b) Discuss the major components of a digital computer with suitable block diagram. Also discuss the functions of these components.
12. (a) Differentiate call by value and call by reference with suitable example.
- (b) Write a program in C to copy the text of one file to another.
- (c) Writed a programd in C for printing Fibonacci series upto a term given by user using recursion.

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