

Paper Code: CS-201/CS-101

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B.Tech.
(SEM II) EVEN SEMESTER EXAMINATION, 2015-16
COMPUTER SYSTEM & PROGRAMMING IN C

[Time: 3 hrs.]

[Max. Marks: 100]

Note:- Attempt all questions. All questions carry equal marks.

1. Attempt any four parts of the following: -

[5x4=20]

- (a) Draw and explain the block diagram of computer.
- (b) Describe the functionalities of an operating system.
- (c) Convert the hexadecimal number $(A9C5.D)_{16}$ to octal number.
- (d) Write an algorithm to find the reverse of a given number.
- (e) Differentiate between interpreter and compiler.
- (f) Define linker and loader.

2. Attempt any four parts out of the following:-

[5x4=20]

- (a) Explain bitwise operators with the help of example.
- (b) What are the formatted input/output functions in C?
- (c) What is the purpose of static variable? Write a program to show it.
- (d) Name any four header files. Also write one function for each header file.
- (e) Explain signed and unsigned integer data types.
- (f) List down all steps to write and execute a C program

3. Attempt any four parts out of the following:-

[5x4=20]

- (a) (a)What is the format of case command? How the case command differs from if statement?
- (b) Write a C program that prints the integers between 1 and n which are divisible by 7but not divisible by 3. Get the value of n from the user?
- (c) Write down all the looping statements with their syntax.
- (d) Write a recursive function to evaluate $1 \times 2 \times 3 \dots \times N$. Get the value of N from user.
- (e) What do you mean by user define functions? Write a function in C which checks whether the given number is odd or even.
- (f) What is function prototype? Why is it used?

4. Attempt any two parts out of the following:-

[10x2=20]

- (a) How a two dimensional array is declared and initialized in C? Write a program in C to find the maximum and minimum value of n numbers stored in an array.
- (b) Declare a structure which contains the following data for 5 students.

Roll number (integer)
Percentage_marks (float)
Father's annual income (integer)

The program should accept the data of all the students from the keyboard and print the details of the student who secured maximum percentage of marks.

- (c) Differentiate between the followings:-
- (i) do and while loop
 - (ii) Structure and union
 - (iii) Break and continue.

5. Attempt any two parts out of the following:-

[10x2=20]

- (a) What is Pointer? How is it declared? Write a program in C that adds two integer numbers a and b using pointer. Use function to add the integers.
- (b) Why files are used in C? What are different modes to open a file? Also write a program in C to create a new text file.
- (c) Write short note on the followings:-
- (i) Enumerated data type
 - (ii) Union
 - (iii) Macros