

CS-101

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B.Tech.

(SEM I) ODD SEMESTER EXAMINATION 2015-16
COMPUTER SYSTEM AND PROGRAMMING IN C

[Time: 3 hrs]

[Max. Marks: 100]

Note- Attempt All Questions. All Questions carry equal marks:-

1. Attempt any four parts:

[5x4=20]

- Define computer. Draw its block diagram.
- Differentiate between RAM, ROM and cache memory on the basis of size, cost and speed.
- Differentiate between GUI based OS and CUI based OS.
- Write a short note on Android Operating system
- (i) $(10110111)_2 = (?)_{16}$ (ii) $(200.5)_{10} = (?)_2$
- Differentiate between the machine language and high level language.

2. Attempt any four questions.

[5x4=20]

- Discuss the different data types available in C.
- What is operator? Explain the relational and logical operators.
- Write a statement to print the smaller of two numbers using conditional operator.
- What is type casting? Explain with the help of example.
- Write a C program to print the area and perimeter of a circle.
- What do you understand by operator precedence and associativity? Explain?

3. Attempt any four parts.

[5x4=20]

- Differentiate between **if else if** and **switch** statements.
- Differentiate between the break and continue statements with the help of examples.
- Write statements in C language to perform the followings:
 - Infinite loop using while
 - If statement to compare that A is not equal to B
 - Nested for loop
- Write a C program to *reverse* of an integer number **NUM** and check whether it is **PALINDROME** or **NOT**.
- What is a recursive function? Write a recursive function to print the sum of first n natural numbers.
- What do you understand by void function? Write a program to print the square of a number using function. Note that the function must be void and it accepts parameter.

4. Attempt any two parts:

[2x10=20]

- a) What is an array? Explain the declaration and initialization of one dimensional array by giving example. Also write a program to print the frequency of vowels from characters stored in an array.
- b) Write a C program to maintain a record of “n” student details using an array of structures with four fields (Roll number, Name, Marks, and Grade). Each field is of an appropriate data type. Print the marks of the student given student name as input.
- c) Write short notes on the followings:
 - i. Union
 - ii. Multidimensional arrays

5. Attempt any two parts:

[2x10=20]

- a) What is a Pointer? How is it declared and initialized? Also write a program in C to swap two numbers using call by pointers method.
- b) What is file? Explain how a file is open and close by giving example? Also Explain the different type of modes used to handle files.
- c) Write short notes on the followings:
 - i. Macros
 - ii. Standard C processors