

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

Paper ID : 180223

Roll No.

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B.TECH.

Theory Examination (Semester-II) 2015-16

FUNDAMENTALS OF COMPUTER PROGRAMMING

Time : 3 Hours

Max. Marks : 100

Note : Attempt all sections.

Section-A

- 1. This section contains ten parts. Attempt all questions.
Each part carries equal marks. (10×2 = 20)**

- (a) What do you mean by a Flow Chart? Explain its various components.
- (b) What do you mean by Operating System? Give any two examples.
- (c) What do you mean by an 'Algorithm'? Write an algorithm to add two numbers.
- (d) What do you mean by Hexadecimal number system?

- (e) What are functions? How many types of functions are there?
- (f) Who is the father of C language?
- (g) Differentiate between getch() and getche() loops.
- (h) Differentiate between WHILE...DO and DOWHILE loops.
- (i) What do you mean by pointer? Explain it with example.
- (j) What is purpose of switch statement in 'C'? Explain it with an example.

Section-B

2. **This section contains Eight parts. Attempt any five parts. Each part carry equal marks:** (5×10=50)

- (a) What is a Digital computer. Draw block diagram of a digital computer and explain each component of it.
- (b) Discuss about the generation of computers along with its advantages and disadvantages.
- (c) Write a C program which reverses the digits of the integer input given to it. For example an input 654321 is outputted as 123456.

- (d) What do you mean by Operators? Discuss about arithmetic operators and relational operators.
- (e) Write short note on the following:
- (i) ASCII code
 - (ii) Sorting
- (f) What are different data types in C language? Explain range, memory size of each with its format specifier.
- (g) (i) Describe Compiler, Interpreter, Assembler?
(ii) Explain in detail about scope of a variable.
- (h) What is the difference between Call by Value and Call by Reference? Explain with the help of example.

Section-C

This section contains Four parts. Attempt any two parts. Each part carry equal marks: (15×2=30)

3. Perform the following:

(i) Convert $(555)_{10} \rightarrow (\text{_____})_{16}$

(ii) Convert $(11011101)_2 \rightarrow (\text{_____})_8$

(3)

P.T.O.

- (iii) Convert $(B678A)_{16} \rightarrow (\text{_____})_8$
- (iv) Find One's complement of the number 1100100.
- (v) Write the Two's complement obtained in (iv).
4. Write a program in 'C' to read a (5×4) matrix using array and to calculate the following:
- (i) Sum of the elements of the third row of the matrix.
 - (ii) Sum of all the elements of the matrix. $(7.5 \times 2 = 15)$
5. Attempt any one part. (15 \times 1 = 15)
- (i) Write down a program in 'C' language to search an element in an array using binary search.
 - (ii) Write down a Program in 'C' to declare a structure which contains the following members. List all those students who are failing in exams (less than 50%).

Roll no. Name, Father's name. Age, City,
Marks-Eng, Hindi, Maths.