



Printed Pages : 3



NCS201

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

PAPER ID : 199225

Roll No.

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B. Tech.

(SEM. II) THEORY EXAMINATION, 2014-15 COMPUTER SYSTEM & PROGRAMMING IN C

Time : 3 Hours]

[Total Marks : 100

Note: Attempt all questions as per instructions.

- 1 Note: Attempt any FOUR parts. Each part carries equal marks. (5×4=20)
- (a) Draw the memory hierarchical structure of a computer system. Explain each memory unit in brief.
 - (b) What is an operating system? Describe the functionalities of operating system.
 - (c) Describe Compiler, interpreter, assembler? Write the names of compiler that are used in c programming.
 - (d) What do you mean by Algorithm? Explain the properties of algorithm.
 - (e) Differentiate high level and machine level language.
 - (f) What is pseudo code? Difference between flow chart and algorithm with example.

2 Note: Attempt any TWO parts. Each part carries equal marks.

(10×2=20)

- (a) What do you understand by ASCII value of a character? Can we use expressions including both integer data type and character data type? Justify your answer.
- (b) Write the difference between Type Conversion and Type Casting. What are the escape sequences characters?
- (c) Convert following number into:
 - (i) $(11010.0110)_2 = (\dots)_{10}$
 - (ii) $(110101011.0110110)_2 = (\dots)_8$
 - (iii) $(2B6D)_{16} = (\dots)_{10}$
 - (iv) $(AB4F.C1)_{16} = (\dots)_{10}$
 - (v) $(54)_6 = (\dots)_4$

3 Note: Attempt any TWO parts. Each part carries equal marks.

(10×2=20)

- (a) Give the loop statement to print the following sequence of integer.
-6 - 4 - 2 0 2 4 6;
- (b) What are the main principles of recursion?
- (c) If $\text{int } a=2, b=3, x=0$; Find the value of $x = (++a, b+=a)$

4 Note: Attempt any TWO parts. Each part carries equal marks.

(10×2=20)

- (a) What are the different types of Operator in C language and also write down the difference between the associativity and precedence of operators.

(b) (i) What is the role of SWITCH statement in C programming Language? Explain with example.

(ii) Distinguish between 'actual & formal arguments' and 'global and extern variables'.

(c) Describe call by value and call by reference with example.

5. Note: Attempt any TWO parts. Each part carries equal marks.

(10×2=20)

(a) Write a program in C language to generate the Fibonacci series.

(b) What do you mean by dynamic memory allocation? Explain the following functions in detail:

(i) free.

(ii) calloc

(c) Write a program to add two matrices of dimension 3 * 3 and store the result in another matrix.