



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)

- Draw the memory hierarchical structure of a computer system. Explain each memory unit in brief.
- What is an operating system? Describe the functionalities of operating system.
- Describe Compiler, interpreter, assembler? Write the names of compiler that are used in c programming.
- What do you mean by Algorithm? Explain the properties of algorithm.
- Differentiate high level and machine level language.
- What is pseudo code? Difference between flow chart and algorithm with example.

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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:

$$\begin{array}{ll} \text{(i)} & (11010.0110)_2 = (\dots)_{10} \\ \text{(ii)} & (110101011.0110110)_2 = (\dots)_8 \\ \text{(iii)} & (2B6D)_{16} = (\dots)_2 \\ \text{(iv)} & (AB4F.C1)_{16} = (\dots)_{10} \\ \text{(v)} & (54)_6 = (\dots)_4 \end{array}$$

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 associatively and precedence of operators.

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(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.

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