

**Code No: 131AD****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B.Tech I Year I Semester Examinations, May - 2018****COMPUTER PROGRAMMING IN C****(Common to CE, ME, MCT, MMT, AE, MIE, PTM, CEE, MSNT)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART- A****(25 Marks)**

- 1.a) Which statement is multi way selection statement? Why? [2]
- b) What is meant by time sharing environment? [3]
- c) Evaluate the value of the following when  $x=3.45$   
 $\text{floor}(x * 100 + 0.5) / 100$  [2]
- d) Can an assignment operator copy one array to another? Justify your answer. [3]
- e) Give the picture to show the memory configuration for the declaration  
`int (*a) [5];` [2]
- f) Differentiate between `strspn` and `strcspn`. [3]
- g) What is the need of `typedef` command? [2]
- h) Is macro an inline function? Justify your answer. [3]
- i) Contrast text files and binary files. [2]
- j) What is a system created stream? Give examples. [3]

**PART-B****(50 Marks)**

- 2.a) Write an algorithm to find LCM of two numbers.
  - b) Describe the process of program development. [5+5]
- OR**
- 3.a) What are the three differences between the conversion codes for input formatting and output formatting? Explain them with examples.
  - b) What is the need of explicit type conversion in C? How to cast the data? [5+5]
- 4.a) Write a recursive function to solve towers of Hanoi problem and trace it with different input.
  - b) Discuss various storage classes of C. [5+5]
- OR**
- 5.a) Write a function that copies a one-dimensional array of  $n$  elements into a two-dimensional array of  $k$ -rows and  $j$ -columns. The rows and columns must be a valid factor of the number of elements in the one-dimensional array i.e.,  $k * j = n$ .
  - b) Discuss the different ways of passing arrays as a parameter to a function. [5+5]

- 6.a) Discuss dynamic memory management in C.  
b) Explain in detail applications of pointers. [5+5]

**OR**

7. Write a C program that converts a string representing a number in Roman numeral form to decimal form. [Follow regular convention for Roman numbers, Read string – parse it to convert in to decimal]  
Eg: Input: XL output: 40 [10]

- 8.a) How to pass a structure to a function? Give illustrations.  
b) Define a structure of arrays. Write code to read values in to this structure. [5+5]

**OR**

- 9.a) Is enumeration a derived data type? Justify your answer with suitable example.  
b) Discuss any three types of preprocessor commands. [5+5]

- 10.a) Compare formatting input/output functions with scanf and printf.  
b) What is the purpose of ungetc( ) function. [5+5]

**OR**

11. Write a program to read two file names, append the first file content at the end of the second file content. [10]

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