

Code No: 131AD

R16

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]

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

OR

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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

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- 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

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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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