

Code No: 51006

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.Tech I Year Examinations, May - 2018****COMPUTER PROGRAMMING AND DATA STRUCTURES****(Common to CE, EEE, ME, ECE, CSE, EIE, IT, AE, BT, AME, MIE)****Time: 3 hours****Max. Marks: 75****Answer any five questions
All questions carry equal marks**

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- 1.a) Explain the symbols of Flow chart.
b) Differentiate between compiler and interpreter. [7+8]
- 2.a) Write a program to calculate the sum of cubes of first n numbers.
b) Explain the different types of data types used in C. [7+8]
- 3.a) Explain about the towers of Hanoi problem with an example.
b) Write a program to merge two integer arrays. Also display the merged array in reverse order. [7+8]
- 4.a) Explain the command line arguments with an example.
b) Write a program to copy a characters of a string from mth position in another string. [7+8]
- 5.a) Explain about the enumerated datatypes used in C with an example.
b) Write a program to calculate the area of one of the geometric figure-circle, rectangle or a triangle. Write a function to calculate the area. The function must receive one parameter which is a structure that contains the type of figure and the size of the components needed to calculate the area must be a part of a union. Note that a circle requires just one component, rectangle requires two components and a triangle requires the size of three components to calculate the area. [7+8]
- 6.a) Write a program to read the contents from the file called adc.txt, counts the no.of characters, no.of lines and no.of white spaces and output the same.
b) Explain the following file operations along with syntax and examples:
i) fopen()
ii) fclose()
iii) fscanf()
iv) fprintf()
v) fgets() [7+8]
- 7.a) Sort the following list of elements by using a Quick sort
35, 40, 45, 50, 60, 30, 25, 20, 15
b) Explain the binary search with an example. [7+8]
- 8.a) Explain the operations of singly linked list with an example.
b) Write a program to input two stacks and compare their contents. [7+8]