

**ADITYA ENGINEERING COLLEGE (A)**

B.Tech I Semester End Examinations (Regular), Nov / Dec – 2017

**COMPUTER PROGRAMMING**

(Common to All Branches)

**Time: 3 hours****Max. Marks: 60****Answer ONE question from each unit****All Questions Carry Equal Marks****All parts of the questions must be answered at one place only****UNIT – I**

- 1 a Explain about algorithm and flowchart with an example. CO 2 [6M]  
 b Why C is a Middle-Level Language. State the reason. CO 1 [3M]  
 c Compare the expressions (a)  $3 < j \ \&\& j < 5$  (b)  $(3 < j) \ \&\& (j < 5)$ ? Is both a) and b) are equivalent CO 2 [3M]

**OR**

- 2 a List out the basic data types and describe each with their size and ranges. CO 2 [6M]  
 b Compare and contrast between pre increment and post increment operators with examples? CO 2 [3M]  
 c Explain implicit and explicit Type conversion. How is data type promotion done in an expression? CO 2 [3M]

**UNIT – II**

- 3 a Describe Selection statements with syntax and give examples. CO 3 [6M]  
 b Write a program for printing the following pattern on the screen CO 3 [6M]

1

1 2

1 2 3

1 2 3 4

**OR**

- 4 a Discuss about the initialization and accessing of array elements for 1D and 2D arrays. CO 3 [6M]  
 b Write a program to find smallest and largest numbers in a given array. CO 3 [6M]

**UNIT – III**

- 5 a Write a recursive program for finding the  $n^{\text{th}}$  Fibonacci value, using functions. CO 4 [6M]  
 b Define recursive function. Can main() function be called recursively? If so quote an example. CO 4 [3M]  
 c Demonstrate the scope rules in blocks of a program. CO 4 [3M]

**OR**

- 6 a Explain the following CO 4 [6M]  
           i) strcmp() ii) strrev()   iii) strcat()   iv) strcpy()  
 b Write a program for calculating the length of a string without using string handling functions CO 4 [6M]

#### UNIT – IV

- 7 a Brief out the dynamic memory allocation in C? CO 5 [6M]  
 b What is dangling memory? Explain. CO 5 [3M]  
 c Comment on the size of pointer to different data types(int \*, char \*, float\*) CO 5 [3M]

**OR**

- 8 a What is a pointer? How to initialize and declare pointer variables? Explain with examples. CO 5 [6M]  
 b Write a program that calculates sum of array elements where array elements can be accessed using a pointer to an array? CO 5 [6M]

#### UNIT – V

- 9 a Define Structure with its syntax and state the process of declaring and accessing members. CO 6 [3M]  
 b Is there any difference between structure and Union? If Yes, Explain. CO 6 [3M]  
 c Write a C program that defines a structure student with members name, average, address and displays the category of student according to the following criteria CO 6 [6M]

average $\geq$ 70-----Distinction  
 60 $\leq$ average $<$ 70-----First Class  
 50 $\leq$ average $<$ 60-----Second Class  
 40 $\leq$ average $<$ 50-----Third Class  
 average $<$ 40-----Fail

**OR**

- 10 a Describe different file opening modes used with the fopen() function. CO 7 [6M]  
 b Write a program to read a text file and count the number of characters in the text file. CO 7 [6M]

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