**OR**

 b) (i) Write differences between Structure and Union

 (ii) Explain recursive function with an example.

5**.** a) What is an abstract data type. List out the basic operations of Stack

**OR**

 b) What is priority Queue? Discuss two of their applications and

 mention how they are represented in memory?

6. a) Write a program for binary search and calculate the time

 complexity

**OR**

 b) Perform merge sort with the following

 15, 5, 6, 24, 75, 3, 50, 43, 8, 2

 [54/416]

 **[Dec-16]**

 **[SDDCA-102]**

**DCA EXAMINATION**

**C PROGRAMMING AND DATA STRUCTURES**

(Effective for the admitted batch 2009-10)

**Time: 3 Hours Max.Marks: 70**

-------------------------------------------------------------------------------------------**Instructions:** All parts of the section must be answered in one place only.

 Figures in the right hand margin indicate marks allotted.

-------------------------------------------------------------------------------------------

**SECTION-A**

1. Answer any **four** of the following (4x5=20)

 a) Define Algorithm

 b) Explain typedef statement

 c) Write differences between while and do-while loops

 d) What is Bit Field. explain with example

 e) Write an algorithm for Push operation in Stack

 f) Write applications of a Queue.

 g) how to calculate time complexity for linear search

**SECTION-B**

Answer all questions: (5×10= 50)

2. a ) Explain operators in C with Examples

**OR**

 b) (i) What is an Identifier? List out the rules of Identifiers

 (ii) Explain Enumerated data type with an example

3. a) Discuss in detail about control structures

 **OR**

 b) Write an algorithm and C Program to check given number is

 prime or not

4. a) Write about 2-dimensional arrays and implement it in matrix addition program

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