

TEST ID

CT-DS301SURAKU

Time allowed: 01: 30 Hour.

Maximum Marks :45

**INSTRUCTION TO CANDIDATES**

- All questions are compulsory and read carefully.
- Marks of each question are indicating against each question.
- Minimum passing marks is 50% weightage of total marks.

1. Define Data Structure with different types. [1+1]
2. Explain array in detail. The array name itself is a constant pointer? Justify your answer. Also discuss nature of **1-D** and **2-D array name** in context to **pointer**. [2+1+2]
3. WAP to find **second largest** element from the array of size 8. [3]
4. How can **subscripting** a pointer that points **2-D array**. Explain with example. [2+2]
5. What is structure? Write a program to represent a student (the member of student is student roll number, name of student, age of student, subject marks of student (the number of subjects decided by student at run time), percentage of student (percentage based on subject marks)). Also define some operations like setData(), showData(), calculatePercentage() etc. The memory block must be created dynamically. [2+6]
6. What is pointer? How can pass 1-D array to function. Explain with example. [1+3]

7. Explain pointer arithmetic with taking suitable example. [2+3]
8. How dynamic memory allocation is different from static memory allocation. How memory allocated dynamically in C. Support your answer with example. [2+4+2]
9. How calculate LOC(LA[I][J]). Array elements are stored in **column-major** order. Explain with example. [3]
10. Consider the  $25 \times 4$  matrix array SCORE. Suppose Base(SCORE)=200 and there are W=4 words per memory cell. Furthermore, suppose the programming language stores 2-D arrays using row-major order. Then the address of SCORE[12,3] is? [3]

~~~~~ !! BEST OF LUCK !! ~~~~~



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