

Total No. of Questions : 4]

SEAT No. :

PC397

[6359]-517

[Total No. of Pages : 2

S.E. (Electronics and Computer Engg.) (Insem)
DATA STRUCTURES AND ALGORITHMS
(2019 Pattern) (Semester - III) (204184)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, & Q.3 or Q.4.
- 2) Neat diagrams must be drawn whenever necessary.
- 3) Assume suitable data, if necessary.
- 4) Use of non-programmable scientific calculator is allowed.

Q1) a) Define a pointer? Write a C function to swap two integers using pointers. **[5]**

b) Define a structure in C? Declare a C structure named FIFA_Player with name, country, jersey_number, and goals_scored as the structure members? **[5]**

c) Write following C functions for string without using pointers. **[5]**

i) String length

ii) String copy

OR

Q2) a) With the help of example, describe use of constant, variable and keywords in C language. **[5]**

b) Compare Structure and union? **[5]**

c) Write the syntax for opening a file with various modes and closing a file. **[5]**

P.T.O.

Q3) a) Write an algorithm for binary search. Apply binary search algorithm to search a target element 50 in the following list. [5]

10, 20, 30, 40, 50, 60

b) Define time Complexity and Space complexity of an algorithm. Illustrate determination of frequency count with the help of a suitable block of code. [5]

c) Write a C function for searching an element in a list of integers using linear search. [5]

OR

Q4) a) Write a C function to implement bubble sort. [5]

b) Explain merge sort technique with suitable example. [5]

c) Apply bubble sort algorithm to sort the following data. [5]

23, 12, 143, 45, 56

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