B.Tech. SEM -IV Electronics / E & TC) 2014 Course (CBCS) :
SUMMER - 2019
SUBJECT: DATA STRUCTURE AND FILES

Day: Saturday
Date: 01/06/2019

Time: 10.00 AM TO 01.00 PM
Max. Marks: 60

S-2019-2616

N.B:

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Draw neat diagrams **WHEREVER** necessary.

Q.1 What are the different parameter passing techniques in 'C' functions. Explain each of them suitable example. **(10)**

OR

Q.1 **a)** What is pointer and how it is initialized. **(05)**

b) What are structures? Explain its use. Define structure having name, age and salary. **(05)**

Q.2 Sort the following paramcter using quick sort. **(10)**
55, 25, 68, -25, -22, 34, 54, 28, 27, 1.

OR

Q.2 What are different searching techniques? Compare them in the context of time complexity and describe any one in detail with example. **(10)**

Q.3 What is singly linked list? What are advantages of singly linked list? Compare singly linked list and Doubly linked list. **(10)**

OR

Q.3 Write a C function to insert a node in singly linked list at start and end. **(10)**

Q.4 Convert the following postfix expression into prefix **(10)**
i) AB + C*DE – FG + $ ($ = exponent)
ii) ABCDE $/- ($ = exponent)

OR

Q.4 Compare stack and queue. Write a necessary C function to implement stack using array. **(10)**

P.T.O.

Q.5 Create a tree of the following: **(10)**

i) Kumar, Rakesh, Amit, Sachin, Virat, kunal, alok, Ajeeth, Rahul

ii) 25, 48, 56, 78, 79, 12, 52, 64, 56, 45.

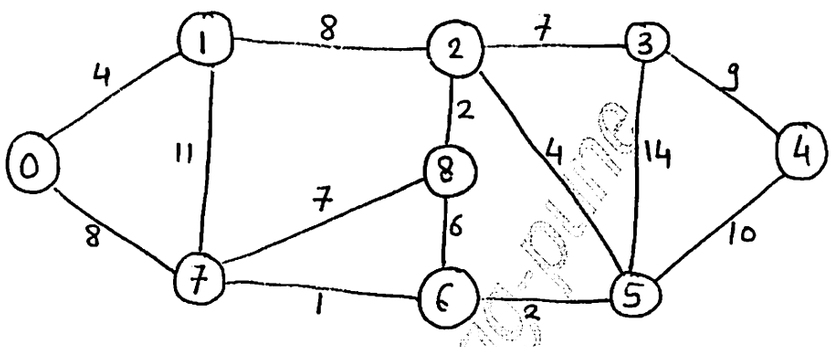
OR

Q.5 What is binary search tree? Explain application of BST. **(10)**

Q.6 What is Depth first Search? What are the advantages and disadvantages of DFS? Also define Graph. **(10)**

OR

Q.6 Explain Dijkstra's algorithm and find the shortest path between 0 and 4 of the given figure: **(10)**



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