Sanjay Ghodawat University, Kolhapur 2019-20

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017 EXM/P/09/01

Year and Program:2019-20 **School of Technology** **Department of Computer Science**

Course Code: CST207 **Course Title: Data Strcutures** **Semester – III**

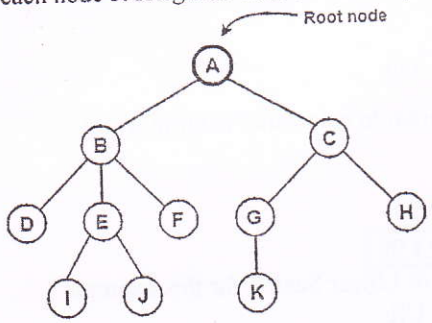
Day and Date Friday 22/11/19 **End Semester Examination (ESE)** **Time:3hrs Max Marks: 100** 10.30am to 1.30pm.

Instructions:
1) All questions are compulsory.
2) Draw suitable diagrams wherever necessary.
3) Figures to the right indicate full marks.

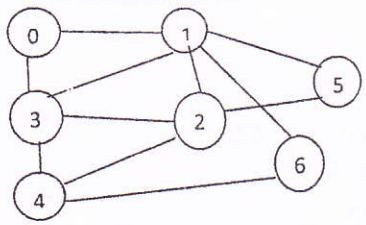
		Marks	Bloom's Level	CO
Q.1	**Solve the following**			
a)	What is call by value & call by reference in the functions. Explain with example.	07	L_1	CO1
	OR			
a)	Define recursion & write a program to calculate Factorial using Recursion.	07	L_1	CO1
b)	Following are the elements in array. 65 | 20 | 10 | 55 | 32 | 12 | 50 | 99 Search element is 12. Make use of Linear Search for this example.	08	L_3	CO2
	OR			
b)	Following are the elements in array. 10 | 14 | 19 | 26 | 27 | 31 | 33 | 35 | 42 | 44 Search element is 31. Make use of Binary Search for this example.	08	L_3	CO2
Q.2	**Solve the following**			
a)	Explain priority queue? Illustrate with an example.	07	L_2	CO3
	OR			
a)	What is Stack? Write a C program for array implementation of Stack (Menu Driven).	07	L_1	CO3
b)	Explain C function to perform Insertion on CLL a)insert at beginning b)insert at end	08	L_2	CO4
	OR			
b)	Explain C function to perform Insertion on SLL a)insert at beginning b)insert at end	08	L_2	CO4

ESE

Q.3	**Solve any Two**			
a)	Define Array & write a C program to calculate average using Array.	08	L_1	CO1
b)	Apply Merge Sort on: 38 27 43 3 9 82 10	08	L_3	CO2
c)	Illustrate whether following expression has balanced symbols or not with stack (A + B)) * (C - D))	08	L_2	CO3
d)	Construct C function for Deletion from DLL a)remove beginning b)remove end	08	L_3	CO4
Q.4	**Solve any Two**			
a)	With the help of following Tree interpret the followings. 1. Siblings 2. Degree of each Node 3. Internal Nodes 4. Level of each node 5. Height of each node 6. Depth of each node	09	L_2	CO5



b)	Compare the methods of tree traversing? Explain with example.	09	L_2	CO5
c)	Find tree for the given post-order ACEDBHIGF. Also find its in-order and preorder	09	L_1	CO5
Q.5	**Solve any Two**			
a)	Explain important terms used in Graph.	09	L_2	CO6
b)	List & Explain graph representation techniques with example	09	L_4	CO6
c)	Make use of appropriate data structures & construct DFS & BFS of following graph	09	L_3	CO6



ESE

Q.6	**Solve any Three**			
a)	Summarize types of binary tree? Explain in detail.	06	L_2	CO5
b)	Construct a tree from the given post-order Post-order of tree is : {8,4,5,2,6,7,3,1}. Also find its in-order.	06	L_3	CO5
c)	Explain following types of graph in graph theory I. Connected graph II. Complete graph III. Weighted graph	06	L_2	CO6
d)	Compare DFS & BFS with example.	06	L_4	CO6

ESE