

SARDAR PATEL UNIVERSITY
M.Sc.IT Examination(Integrated), 7th Semester
Wednesday, 19th October, 2016.
Time: 02:00 P.M to 05:00 P.M
Subject Code: PS07CIIT02
Subject: Analysis and Design of Algorithm

Total Marks: 70
[08]

Q.1 Multiple Choice Questions

1. _____ graph edges do not have an associated direction
 - a. Directed.
 - b. Undirected
 - c. Connected
 - d. Multi
2. If we do not pick that object to fill into a knapsack then its value is
 - a. Two.
 - b. Zero.
 - c. One.
 - d. None of these.
3. SSSP stands for

a. Single Source Step Path	c. Single Source Shortest Path
b. Single Step Source Path	d. Single Source Single Path
4. We need _____ units of time to Process each Job.
 - a. One
 - b. Three
 - c. Two
 - d. Four
5. The forward Approach Method is also Known as

a. Forward Reasoning.	c. Backward Reasoning
b. Dynamic Programmig	d. Optimal Reasoning
6. Leaf node is known as _____ node.

a. Terminal.	c. Parent.
b. Root.	d. Non-terminal.
7. A binary tree has at most _____ child.

a. Two.	c. Three.
b. One.	d. None of these.
8. In Binary Search Circular Node Known as

a. Extrenal Node	c. Internal Node
b. Square Node	d. Round Node

Q.2 Short Questions (Any Seven)

[14]

1. What is UnDirected Graph, Directed Edge, Cycle and Length of Path.?
2. What is stack? Define concept of stack.
3. Write a Divide and Conquer General Algorithm.
4. Define Merge Sort?
5. List Shortest Path Applications.
6. List different algorithm to find spanning tree.
7. Explain Selection of Object in Increasing Order of weight in Knapsack.
8. Write 0-1 Knapsack algorithm.
9. What is Spanning Tree?

(P.T.O.)

- Q.3 a) Explain Push and POP Operation in stack. [6]
b) Explain Algorithm for insert a value in simple queue and delete a value in simple queue. [6]

OR

- b) Explain How we insert a node in binary tree with suitable example. [6]

- Q.4 a) Explain Quicksort algorithm in detail. [6]
b) Explain Merge sort in detail. [6]

OR

- b) Write and Explain Quicksort Algorithm. Solve the following Example upto a level in Which left side has small value then pivot and right side has large value then pivot.

Example: 52, 33, 84, 22, 75, 68, 104, 46, 109, 97 [6]

- Q.5 a) Explain Knapsack Algorithm in detail. [6]
b) Explain Job sequencing with deadline in detail. [6]

OR

- b) Explain Prime's algorithm. [6]

- Q.6 a) Explain Forward Approach in Dynamic Programming. [6]
b) Explain Backward Approach in Dynamic Programming. [6]

OR

- b) Explain Travelling Salesman Problem. [6]

All the Best

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