

SYNERGY INSTITUTE OF ENGINEERING AND TECHNOLOGY, DHENKANAL

Near NH-55, Banamali Prasad – 759001



Assignment-2[CO2]

Full Marks-40

Duration-Within 1 Week from Notification

Name-

Registration No-

Subject with Code: Design And Analysis of Algorithms
(CSPC2006)

Course & Branch: B. Tech CSE

Year & Semester: 2nd . 4th

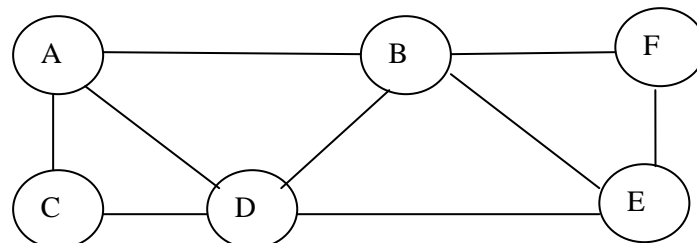
Course Outcome	Total Marks	Marks Secured	Signature of Evaluator
CO2	40		

Section-A **Answer All Questions**

1. What is Disjoint Set? What are its applications? [2 marks][L2]
2. What is a Red-Black Tree? What are its properties? [2 marks][L2]
3. What is Divide and Conquer Paradigm for problem solving? [2 marks][L2]
4. What is AVL Tree? [2 marks][L2]

Section-B **Answer All Questions**

1. Write an algorithm for Selection Sort and analyze its Time Complexity. [6 marks][L2]
2. Write an algorithm for BFS and apply BFS on given Graph. [6 marks][L3]



Section-C **Answer All Questions**

1. What is Heap Data Structure? Write a procedure for MAX-HEAPIFY and apply Heap Sort on array A=<5,3,17,10,84,19,6,22> [10 marks][L3]
2. Write an algorithm for Quick Sort. Analyze its Time Complexity. Apply Quick Sort on array A=< 5,3,17,10,84,19,6,22> [10 marks][L3]