Department of CSIT, GGV Bilaspur,(C.G.)- 2020-21

Class BSc. CS (H) 4th Sem

Subject:- Design Analysis & Algorithm (C-X)

Time : 2 Hours **Max Marks : 70**

Note:- *Attempt any **14 (Fourteen)** questions from (**1 to 18**) question and each questions with carry **equals marks**.*

14 x 5 = 70 marks

Q. 1 Define algorithm? Write its characteristics.

Q. 2 Define time & Space complexity and their its types.

Q. 3 In the given list

21	34	43	57	66	78

And find the element 78 using binary search.

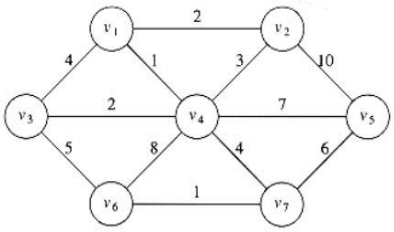
Q. 4 Apply quick sort algorithm

4	2	3	5	6	9

Q. 5 Discuss about dynamic programming and their advantages & application in real world?

Q. 6 why it is called greedy technique its having optimal solution define?

Q. 7 Find the Minimum Spanning Tree of the following graph using Kruskal's algorithm.



Q. 8 Difference between bubble sort and Insertion sort?

Q. 9 Apply to insertion sort algorithm:-

5	7	6	15	17	5	10	11

Q.10 Differentiate between searching and sorting algorithm

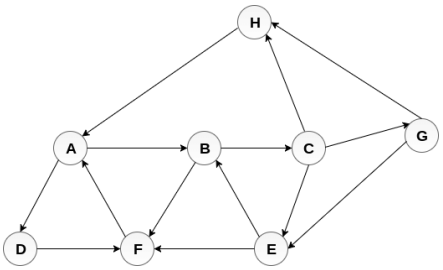
Q. 11 Define bucket sort algorithm with suitable example

Q. 12. Create a Red black tree with insertion operation:-

8	18	5	15	17	25	40	80

Q. 13 Define Graph with all the terminology in graph

Q. 14. Apply to DFS algorithm to traverse a graph



Q. 15 Differentiate between BFS & DFS.

Q. 16 How to construct binary search tree ?

Q. 17 Write the all searching & sorting algorithm complexity with all cases.

Q. 18 Explain dynamic programming .