Group B

Attempt any Six question

2. What is Data Structure? Explain different operations to be performed on data structure [1 + 4]
3. Define Greedy Algorithm and heuristic algorithm. Briefly explain Big-Oh Notation [3 + 2]
4. What is circular queue? Write an algorithm to insert an item in circular queue [2 + 3]
5. How does ABL tree differ from BST? Construct and AVL tree from following data: 35, 56,68,65,44,41,31,49,20
6. What is B-tree? Create a B-Tree of order 4 using following data 6,4,22,10,2,14,3,8,11,13,5,9
7. What is binary search? Write an algorithm to search an item using binary search [2 + 3]
8. What is graph? Explain Kruskal's algorithm to construct minimum spanning tree with example [1 + 4]

Group C

Attempt any two question

9. Define stack. List the applications of stack. Trace the algorithm to convert infix to postfix with following infix expression ((A + B) - C * D/E)*(H-I)*F+G and evaluate the obtained postfix expression with following values: A = 4, B = 2, C = 4, D = 3, E = 8, F = 2, G = 3, H =5, I = 1 [1 + 1 + 4 + 4]
10. What is double linked list? How does it differ from circular linked list? Write an algorithm or function to add a node at the beginning and end of double linked list [1 + 1 + 4 + 4]
11. What is heap? Differentiate between min heap and max heap. Sort the following data in ascending order by heap sort method: 2,9,3,12,15,8,11 **[2 + 2 + 6]**