VII SEMESTER B.TECH (ELECTRICAL & ELECTRONICS ENGINEERING) PROCTORED ONLINE MAKEUP EXAMINATIONS, FEBRAUARY 2022

DATA STRUCTURES AND ALGORITHMS [ELE 4078]
REVISED CREDIT SYSTEM
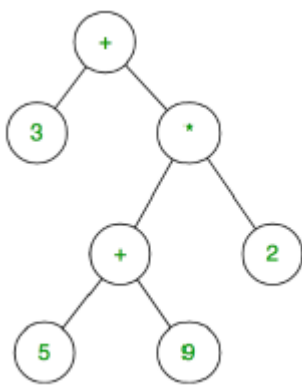
Time: 75 Minutes + 10 Minutes	Date: 19 February 2022	Max. Marks: 20

Instructions to Candidates:
- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitably assumed.
- ❖ Time: 75 minutes for writing + 10 minutes for uploading.

1A. a) Evaluate: $12+34*+$

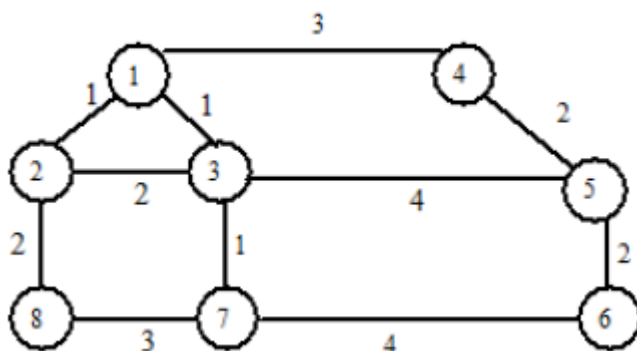b) Given the expression tree, write the infix operation and evaluate the same.

(02)

1B. Suppose the letters a, b, c, d, e, f have probabilities 1/2, 1/4, 1/8, 1/16, 1/32, 1/32 respectively.

What are the Huffman code for the letter a, b, c, d, e, f?   **(03)**

1C. Find any one of MST using Kruskal's algorithm from this graph. Give all the relevant steps and draw MST.

(05)

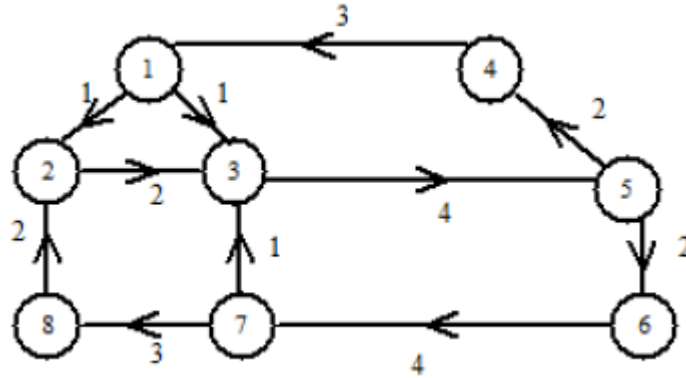**2A.** Write a recursive Pseudo code to perform m*n using repeated addition.   **(02)**

2B. Solve using the substitution method. Each step carries marks

$t(n)=32t(n/2) +6n; \quad n>1$
$t(n)=1; \qquad\qquad n=1$

(03)

2C. Find the shortest distance from vertex 1 to all other vertices using Dijkstra's Algorithm.

(05)