CODE: 17CF00101

MCA I Year I Semester Supplementary Examinations, March 2018

MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE

Time : 3 hours Max Marks : 60

Answer all **five** units. (5 x 12 = 60 Marks)

UNIT-I

1. (a) Describe the Set operations in Briefly? Draw the Venn Diagrams for the Set operations?

(b) Form a Group of 10 Professor how many ways can a committee of 5 members be formed so that atleast one of professor A and one of Professor B will be included?

OR

2. (a) Explain in briefly different Types of Functions With Examples?

(b) Construct the Truth Table for the following {(p^q)V(~p^r)} V (q^r)}

UNIT-II

3. (a) Describe the Group Properties with Examples?

(b) Define Coset and explain Coset Decomposition?

OR

4. Explain in briefly Lagranges's Theorem?

UNIT-III

5. (a) In how many ways can 7 women and 3 men be arranged in a row if the 3 men must always stand next to each other?

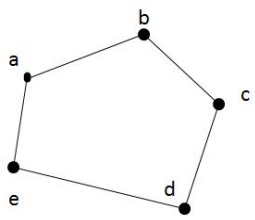
(b) There are 30females and 35 males in junior class while there are 25 females 20 males in senior class. In how many ways can a committee of 10 be chosen so that there are exactly 5 females and 3 juniors on the committee?

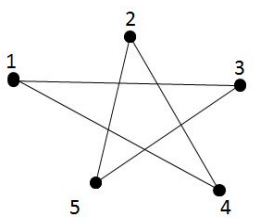
OR

6. Solve the recurrence relation an = -an-1 + 4an-2 + 4an-3 with a0=8, a1=6 and a2=26?

UNIT-IV

7. Identify this two Graphs are Isomorphic or not





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OR

8. Write Short Notes on

a) Euler's Path

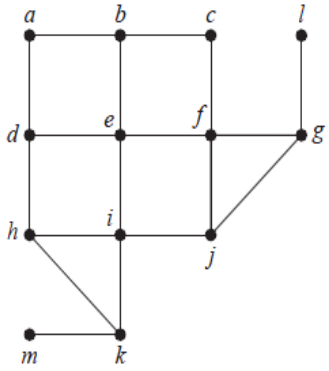
b) Hamiltonian Path

c) Euler's Circuit

d) Hamiltonian Circuit

UNIT-V

9. Find the Spanning Tree by using BFS



OR

10. Describe in briefly about Numeric Functions?

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