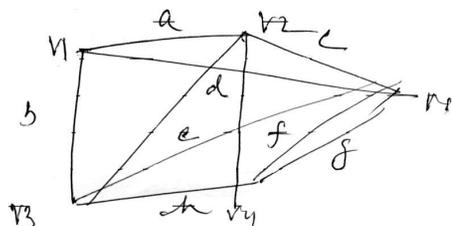


UNIT-IV

8. (a) Define cut set of a graph, cut edge of a graph. [8]
- (b) Define fundamental cut sets of a graph with suitable example. [7]
9. Define Edge connectivity and vertex connectivity. Also define fundamental cut sets of a given graph :



if cut sets are { a, b, c, f}, find the new graph. [15]

----- X -----

Question Paper Code : 6495

BCA (Semester-IV) Examination, 2018

(New Syllabus)

GRAPH THEORY

[Fifth Paper]

[BCA-S-210]

Time : Three Hours]

[Maximum Marks : 100

Note : Answer **five** questions in all. Question **no. 1** is **compulsory** .Besides this, attempt **one** question from each Unit.

1. Answer the following questions in brief : [4×10=40]
- (a) Explain the matrix representation of a graph.
 - (b) Explain tree and application of tree in graph theory.
 - (c) Define Eccentricity in a tree with suitable example.
 - (d) Difference between tree and rooted tree.
 - (e) Define height of Binary tree and level of a tree.

- (f) Difference between Directed and Weighted graph.
- (g) Define Multigraph and Simple graph.
- (h) Define Isolated vertex and degree of a vertex.
- (i) Define connectivity and separability.
- (j) Differentiate walk and path by suitable example.

UNIT-I

- 2. Explain simple connected graph of 5 nodes. Write degree of each node of that graph and make its adjacency matrix. [15]
- 3. (a) Explain the regular and Bipartite graph. [8]
- (b) Define the complement of directed and undirected graph with suitable example. [7]

UNIT-II

- 4. Define connected graph, weakly connected and strongly connected graph. [15]
- 5. (a) Explain Konigsberg Bridges problem and define Euler's graph. [8]

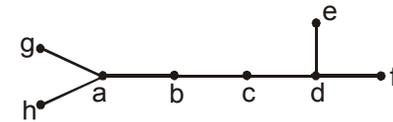
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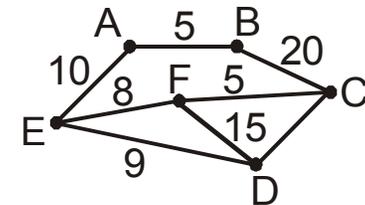
- (b) Explain Hamiltonian paths and circuit with example. [7]

UNIT-III

- 6. (a) Define tree and forest. [8]
- (b) Define Distance (g, f) and centres in a tree and also diameter. [7]



- 7. (a) Graph is given : [8]



Define spanning tree of this graph and find the spanning tree of this graph.

- (b) Define Minimum cost spanning tree and explain Prim's algorithm to create minimum cost spanning tree. [7]

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(3)