

UNIT-IV

Question Paper Code : 6495

BCA (Semester-IV) Examination, 2018

(New Syllabus)

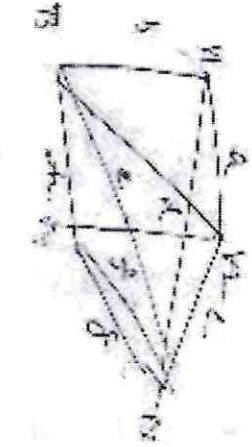
GRAPH THEORY

[Fifth Paper]

[BCA-S-210]

Time : Three Hours]

[Maximum Marks : 100



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

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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.

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- (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]

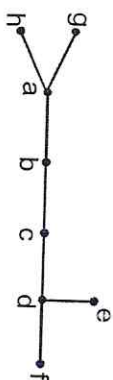
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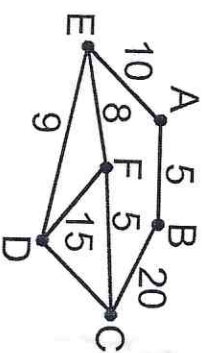
- (b) Explain Hamiltonian paths and circuit with example. [7]

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]



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

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