

- (a) Apply Kruskal's algorithm to G. List the edge of the forest that is grown, in the order that they added. 10
- (b) What is the weight of minimum spanning tree in G ? 6

#### UNIT - IV

- 4 (a) What is zero-one principle ? Describe in detail. 8
- (b) Prove that if a comparison network with n input sorts all  $2^n$  binary string of length n correctly, then it sort all sequence correctly. 8

#### OR

- 4 (a) Explain the bitonic sorting network with suitable example. 8
- (b) Write short note on :  
 (i) Priority Queue  
 (ii) Operations on disjoint sets. 8

#### UNIT - V

- 5 (a) Describe the Chinese remainder theorem. 8
- (b) What is Division theorem ? Explain. 8

#### OR

- 5 Write short note on :  
 (a) Computation of Discrete logarithm  
 (b) Modular Arithmetic 16

