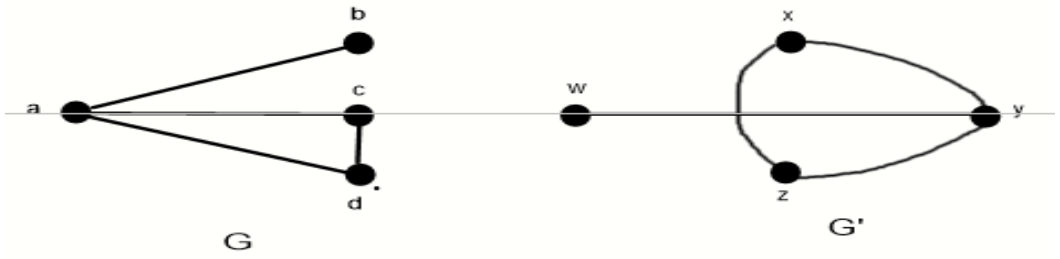
DISCRETE MATHEMATICS

(1st internal)

Time : **45 min** Full Marks : **20**

1. Multiple Choice Questions : (**Any Five**) (5 *1 = 5)
   - I. Let P: I am in Darjeeling; Q: I love cricket. Then q -> p (q implies p) is?
     a) If I love cricket then I am in Darjeeling b) If I am in Darjeeling then I love cricket
     c) I am not in Darjeeling d) I love cricket
   - II. The compound statement A->(A->B) is false, then the truth values of A, B are respectively _____
     a) T, T b) F, T c) T, F d) F, F
   - III. If A is any statement, then which of the following is a tautology?
     a) A ∧ F b) A ∨ F c) A ∨ ¬A d) A ∧ T
   - IV. The minimum number of edges in a connected cyclic graph on n vertices is _____
     a) n – 1 b) n c) 2n+3 d) n+1
   - V. A simple graph can have _____
     a) multiple edges b) self loops
     c) parallel edges d) no multiple edges, self-loops and parallel edges
   - VI. Degree of a graph with 12 vertices is _____
     a) 25 b) 56 c) 24 d) 212
2. Short Answers : (**Any Five**) (5 * 2 = 10)
   - I. What is a Pseudograph?
   - II. What is a bipartite graph?
   - III. What is a contradiction in a proposition?
   - IV. What is Propositions?
   - V. What is a Subgraph?
   - VI. What do you mean by degree of a graph?
3. Long Answer: (**Any One**) (5 * 1 = 5)
   - I. Show that the given pairs of the graphs are isomorphic.



   - II. Construct the truth table for **(p V q) V ~p**