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UNIT TEST-1 M.Sc-II Sem (Maths)

Date - 27-02-2024 Paper-5 (Discrete Maths)

Note - Solve five questions from following:

Q1 - Give short notes on

(i) Konigsberg bridge problem (ii) Isomorphic Graph

(iii) Complete graph = (K_n) (iv) Bipertite Graph = $(K_{m,n})$

Q2 - Prove that in any graph the number of vertices of odd degree is always even.

Q3 - State and prove Hand Shaking Lemma

Q4 - Prove that the maximum number of edges in a simple graph with n-vertices is $= \frac{n(n-1)}{2}$

Q5 - Let G be a simple graph with n-vertices. If G has k-components, then the maximum number of edges that G can have are

$$\frac{(n-k)(n-k+1)}{2}$$

Q6 - Write short Notes on:

(i) Subgraph (ii) Complement of a subgraph

(iii) Degree of a vertex (iv) Simple graph