Question Bank for PG Course
অঙ্ক (Mathematics)
অষ্টম (খ) পত্র (Paper-VIIIB)
Graph Theory: PGMT-VIIIB

1. What is a simple graph?

2. What is the relation between the sum of the degrees of all the vertices $\Sigma\, d\,(v_i)$ and the number of edges e of a graph?

3. How does a Digraph representing a reflexive binary relation be recognized?

4. Let G be a connected graph with $n \geq 2$ vertices and e edges such that $e < n$. How many pendant vertices will be there?

5. Find the number of edges in a complete graph G with n vertices.

6. How many edges are there in $K_{m,n}$?

7. State the necessary and sufficient condition for a complete graph K_n to be Eulerian.

8. Find the number of edges in a forest with n vertices and k components.

9. Which of the following statements is/are false?

    i)   A graph is a Tree if and only if it is minimally connected.
    ii) Every pair of vertices in a Tree is joined by a unique path.
    iii) A Tree with $n-1$ vertices contains exactly n edges.
    iv) A connected graph with a cycle is called a Tree.

10. When is Kruskal's algorithm used ?

11. What is the Height of a rooted tree ?

12. What is the maximum number of vertices in an m-tree at level p ?

13. Find the relation between the height h and the number of vertices n of a complete binary tree T.

14. If G is a connected planar graph with n vertices, e edges and f faces, then write down Euler's formula.

15. Let G be a connected 4-regular planar graph with 8 vertices. How many faces does G have ?