1st Sessional Examination Maths (BSc IT)

Time of 1 hr

Total Marks : 25

(1) Answer any bive.

1x5 = 5

(a) What do you mean by a Pendent Vertex?

(b) Debine Connected Graph.

(c) Draw a Regular Graph having 4 vertices and having degree ob each venten as '3'.

(d) What is Ecentricity of a vertex in a Graph?

(e) Debine Basis ob a Vector Space.

(f) Write dimensions of the Vector Spaces C(R) and R(R).

(2) Answer any two:

2x2 = 4

(a) How many vertices are there in a graph G with 15 edges, it its each venter is ob degree 3.

(b) Show that the subset 3= {(1,0,0), (0,1,0), (0,0). of V3(F) generates on spans the entire Vector Space V3 (F) i.e. L(s) = V3 (F)

(c) 90 two vectors are Linearly dependent, then Prove that one of them is scalar multiple of the other.

(3) Answer any bour

4x4 = 16

(a) It Wy and Wy are subspaces of the V.S. V(F) then Show that (i) Wy + Wy is a subspace of V(F) (ii) Wy + Wy = L (W, UW)

(b) State and Prove Rank-Nullity Theorem.

(c) Prove that the set of all solutions (a, b, c) of the equations at 6+2c = 0 is a sub-space of the V.S. V3(F

(d) (i) Show that maximum number of edges in a simple graph with 'n' vertices is n(n-1) (ii) Draw the Complete bipartite Graph G4,3 (e) The size of every connected graph of order n' le affeast (n-1). yet means voy ale touve (a) b) Deline Courseted Graph. (c) Draws a Regular Comph having '4 vertices and having degree of each venten as '3' (d) what is Ecentricity as a world in a Graph? (e) Debine Basis of a Nedop Space. (5) White olimensions of the victor space C(R) and R(R). 4 = cxc = ont ino movem (6) (a) How many vertices are there in a graph of with 15 edges, it its each venter is of degree 3? (b) show that the subset 3= {(1,0,0), (0,1,0), (0,0)} ob vis(IF) generales on spanis the entire vector space vis(F) (c) 85 two vectors are linearly dependent, then frove that one of them is scalar multiple of the other. (3) Answer any four? 4x4=16 a) the Wy and W are subspaces of the V.S. V(F) then show that (i) WIN is a subspace of V(#) (i) $w_3 + v_6 = L(w_1 v_0)$ (b) state and Prove Pank-Nullity Theorem. (D) Prove that the sel of all solutions (a, b, c) of the equations attite = a is a sol-space of the vis. vil