5th Semester Mathematics (General)

Assignment, Paper – DSE-I(A)

Total - 20 Marks

1) Discuss the concept of a subspace in a vector space. Let V be the vector space of all functions from $\mathbb{R}$ to $\mathbb{R}$ and $W_1 = \{f : f(4) = 3 + f(2)\}$, $W_2 = \{f : 2f(3) = f(1)\}$, $W_3 = \{f : f(5) = 0\}$. Identify the subspaces of V. $\boxed{5}$

2) Elaborate the conceptions of row space and column space in your own words. $\boxed{5}$

3) A particle moves in a straight line with an acceleration which is μ times the distance from a fixed point 'O' in the straight line and is always away from 'O', μ being a constant. If at time $t = 0$, the particles were projected from a distance 'a' from 'O' towards the point with velocity $V > a\sqrt{\mu}$, find the time after which the particle will arrive at 'O'. $\boxed{5}$

4) Discuss Kepler's laws of planetary motion and their modifications. $\boxed{5}$

Submit Latest by :- 23rd July'2021.

Scanned with CamScanner