SARASWATI MAHILA MAHAVIDYALAYA,PALWAL

SESSION:**2021-22**

LESSON PLAN   Sem : Even

Name of faculty : Ms.Amrita   Class : Bsc-I(CS)

Designation : Assistant Professor in Maths   Subject : Vector Calculus

Sr.No.	Topics/chapters	Lectures	Topics of assignment/test
1.	Scalar and vector product of three vectors, product of four vectors. Reciprocal vectors. Vector differentiation. Scalar Valued point functions, vector valued point functions, derivative along a curve, directional derivatives.	Lect 1 to Lect 20	Test of Vector differentiation.
2.	Gradient of a scalar point function, geometrical interpretation of grad , character of gradient as a point function. Divergence and curl of vector point function, characters of Div f and Curl as point function, examples. Gradient, divergence and curl of sums and product and their related vector identities. Laplacian operator.	Lect 21 to Lect 40	Test of Gradient, Divergence and curl of vector point function.
3.	Orthogonal curvilinear coordinates Conditions for orthogonality fundamental triad of mutually orthogonal unit vectors. Gradient, Divergence, Curl and Laplacian operators in terms of orthogonal curvilinear coordinates, Cylindrical co-ordinates.	Lect 41 to Lect 60	Test of Curl and Laplacian operators in terms of orthogonal curvilinear coordinates, Cylindrical co-ordinates.

4.	Vector integration; Line integral, Surface integral, Volume integral. Theorems of Gauss, Green & Stokes and problems based on these theorms.	Lect 61 to Lect 80	Assignment of theorems of Gauss, Green & Stokes and problems based on these theorms.