FMCC 501 Advanced Calculi(3-1-0)

Module –I (14 Hours)

Special Function

Some special functions:Bessel'sfunction,Legender polynomial(function),Gamma,Beta,errorfunctions;Integral transforms: Fourier transform , Z-transform

Module –II (14 Hours)

Calculus of variation:

Variation of a functional, Euler-Lagrange equation

Variational problems with fixed boundaries,variational problem with Moving boundaries,sufficient conditions for an extremum,direct methods in variational problem. Variational methods for boundary value problems in ordinary and partial differential equations.

Module –III (12 Hours)

Linear Integral Equations:

Linear integral equation of the first and second kind of Fredholm and Volterra type, Solutions with separable kernels. Characteristic numbers and eigenfunctions, resolvent kernel.

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Text Books:

1 Linear Integral Equation by Santi Swarup; Krishna publications

2) Calculus of variation by A.S. Gupta ;PHI

Chapter-1(1.1-1.6),2(2.1-2.3),3(3.1-3.6),4(4.1-4.2),6(6.1-6.3)