**SARASWATI MAHILA MAHAVIDYALAYA,PALWAL**

SESSION:**2021-22**

**LESSON PLAN** Sem : Even

Name of faculty : Ms. Amrita Agrawal Class : BA-II

Designation : Assistant Professor in Maths Subject : Special Function and Integral Transform

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| **Sr.No.** | **Topics/chapters** | **Lectures** | **Topics of assignment/test** |
| 1 | Power Series Method, definition of beta & gamma functions, bessels equation & its solutions, covergence, recurrence relations & generating functions, orthogonality of bessels functions. | Lect 1 to Lect 20 | Assignment of beta & gamma function.  Test of power Series method & bessels functions. |
| 2 | Legendre & hermit's function & their properties, recurrence relations & generating functions, orthogonality of Legendre & hermite polynomial, Rodrigues formula, Laplace integral integral representation of Legendre polynomial. | Lect 21 to Lect 40 | Assignment of recurrence relations & generating functions.  Test of Legendre & hermite polynomial & Rodrigues formula. |
| 3 | Existence theorem for Laplace transforms, linearity of Laplace transform, shifting theorems, Laplace transforms of derivatives & integral, Differentiation & integration of Laplace transforms, convolution theorem inverse Laplace transforms of derivative & integrals. | Lect 41 to Lect 60 | Assignment of Laplace transforms & shifting theorem.  Test of Laplace transforms & inverse Laplace transform & revision of Laplace transforms. |
| 4 | Fourier transform: Linearity, shifting, modulation, convolution theorem, Fourier transform of derivatives, relation between Fourier & Laplace transform, parseval's identity for Fourier transform, solution of differential equation using Fourier transform. | Lect 61 to Lect 80 | Assignment of shifting modulation, convolution theorem.  Test of Fourier transform & Laplace transforms & revision of Fourier transform. |