Odd Semester Lesson Plan

Subject : Mathematics

Teacher name: Dr Rajesh, Paper 3 Semester 5th

October 2020

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| Finite Differences operators and their relations. Finding the missing ter ms and effect of error in a difference tabular values, Interpolation with equal intervals: Newton’s forward and Newton’s backward interpolation formulae. Interpolation with unequal intervals: Newton’s divided difference, Lagrange’s Interpolation formulae, Hermite Formula. |

November 2020

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| Central Differences: Gauss forward and Gauss’s backward interpolation formulae,  Sterling, Bessel Formula.  Probability distribution of random variables, Binomial distribution, Poisson’s distribution, Normal distribution: Mean, Variance and Fitting. |

December 2020

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| Numerical Differentiation: Derivative of a function using interpolation formulae as studied in Sections –I & II.  Eigen Value Problems: Power method, Jacobi’s method, Given’s method, House- Holder’s method, QR method, Lanczos method. |

January2021

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| Numerical Integration: Newton-Cote’s Quadrature formula, Trapezoidal rule, Simpson’s one- third and three-eighth rule, Chebychev formula, Gauss Quadrature formula. |

February 2021

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| Numerical solution of ordinary differential equations: Single step methods- Picard’s method. Taylor’s series method, Euler’s method, Runge-Kutta Methods. Multiple step methods; Predictor-corrector method, Modified Euler’s method, Milne-Simpson’s method. |