

SNS COLLEGE OF TECHNOLOGY (AN AUTONOMOUS INSTITUTION) COIMBATORE - 35



UNIT 5NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATION FOURTH ORDER RUNGE KUTTA METHOD FOR SOLVING 1ST ORDER EQUATIONS

Fourth order Runge-Kutta method for solving first and second order equations Second order RX method KI= hFLX,y) K2=hF(x+ 12, y+ K1) $\Delta y = K_2$ where $h = \Delta x$; $y_1 = y_0 + \Delta y$ Theid order RK Method! KI= h Flxiy K2= hF(x+2, y+ /2) K3 = h F (x+h, y + 2K2-K1) Ay = 1 [K, + 4K2 + K3] Now 4 = 40+44 Fourth order RK Method! KI= hF(X14) K2=hF(x+=,y+ K=) K3=hF(x+告,y+答) Ky = hF[x+h,y+k3] Dy = [K1+2K2 + 2K3+K4] U = Yo+ AY