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|  | **Practical Assignment 1** | 156 | 01/07/2020 |  |
| 1 | * Bisection Method |  |  |  |
| 2 | * Bisection Method |  |  |  |
| 3 | * Falsi Method |  |  |  |
| 4 | * Secant Method |  |  |  |
| 5 | * NewtonRaphson Method |  |  |  |
| 6 | * Fixed Point |  |  |  |
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|  | **Practical Assignment 2** | 175 | 01/07/2020 |  |
| 1 | Evaluate Integral of (e^x^2)\*sin x dx from 0 to 1 using Trapezoidal rule correct to 3 decimal places |  |  |  |
| 2 | Evaluate the integral:integral of dx/(1+x) from 0 to 1 Using(i) Simpson’s 1/3 Rule correct to six decimal places (ii) Simpson’s 3/8 rule correct to six decimal places |  |  |  |
| 3 | A car laps a race track in 84 seconds. The speed of the car at each 6-second interval is determined by using a radar gun and is given from the beginning of the lap, in feet/second by the entries in the following table.  Time 0 6 12 18 24 30 36 42 48 54 60 66 72 78 84  Speed 124 134 148 156 147 133 121 109 99 85 78 89 104 116 123  How long is the track? Use (i) Trapezoidal Rule (ii) Simpson’s 1/3 rule (iii) Simpson’s3/8 rule |  |  |  |
| 4 | Write a program to solve the differential equation dy/dx=(y-x)/(y+x), where y(0) = 1, using (i) Euler’s method (ii) Runge - Kutta second order method in the interval 0 to 1 using step-size 0.1 Tabulate your results |  |  |  |
| 5 | Find the solution of differential equation, for the range 0 <= t <= 1 dy/dt = t + (y)^(1/2) with y(0) = 1, taking step size h = 0.2 using Runge-Kutta method of order 4 |  |  |  |
| 6 | Find the solution of differential equation dy/dt = 1/2 (t+y), for y (2.0) given y(0) = 2 ,y(0.5) = 2.636,y(1.0) = 3.595 and y(1.5) = 4.968 , use h = 0.5 using (i) Milne-Simpson’s predictor corrector method (ii) Adam-Bashforth-Moulton’s predictor-corrector method |  |  |  |
| 7 | Use Adam-Bashforth-Moulton’s predictor-corrector method to obtain the solution of the equation dy/dx= 1-xy/x^2 at x = 1.4, where y(1) = 1. Compute y(1.1), y(1.2) and y(1.3) using Runge-Kutta second order method. Tabulate the results obtained thus. |  |  |  |
| 8 | Use Milne Simpson predictor corrector method to obtain the solution of the equation dy/dx= 1-xy/x^2 at x = 1.4, where y(1) = 1. Compute y(1.1), y(1.2) and y(1.3) using Runge-Kutta fourth order method. Tabulate the results obtained thus. |  |  |  |
| 9 | From the following table estimate y'(1.1) and y'(1.2) using 3 point formulas and 5 point formulas x 1.0 1.05 1.10 1.15 1.20 1.25 1.30 y 1.0 1.0247 1.0488 1.0724 1.0954 1.1180 1.1402 |  |  |  |
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