

14. State (i) Milne's predictor corrector formula (ii) Adam's predictor corrector formula

15. Write a program to find out the factorial of a number using function

PART – C

Answer ALL questions (5 x 15 = 75 Marks)

16. i) Discuss about the various symbols used in flowcharting (5)

ii) Define a variable. Explain the conventions used in reading and displaying variables (10)

(OR)

17. i) Explain about the types of characters used in format strings (10)

ii) How to specify the width using scanf function (5)

18. Describe about the functioning of loops in C with suitable examples

(OR)

19. Explain the role of Arrays in C with examples

20 a) Solve the equation $x - \cos x = 0$ by the Bisection method. (8)

b) Solve $x^2 - 12 = 0$, by using Newton Raphson Method. (7)

(OR)

21. a) Solve the following system of equations, by the Gauss Elimination method. (8)

$$2x - 3y + z = -1$$

$$x + 4y + 5z = 25$$

$$3x - 4y + z = 2$$

b) Using the iteration method, calculate the root of the equation $x^3 - x - 1 = 0$, correct to four decimal places. (7)

22. Evaluate $\int_0^6 \frac{dx}{1+x^2}$, by using (i) the trapezoidal rule, (ii) Simpson's 1/3 rd rule and (iii) Simpson's 3/8 th rule.

(OR)

23) Using the Runge-Kutta method of fourth-order, solve $dy/dx = (y^2 - x^2)/(y^2 + x^2)$ with $y(0)=1$ at $x=0.2, 0.4$.

24. Write a program in C to find the smallest positive root using Newton-Raphson method.

(OR)

25. Write a program in C to implement Runge-Kutta method