



X	5	6	9	11
Y	12	13	14	16

(B) Find the positive root of  $x^3+2x^2+10x-20=0$  by Newton-Raphson method. 7

**Q-3 Attempt all questions (14)**

(A) Solve the following system of equations by Gauss Seidel Method: 7

$$6x + y + z = 105, 4x + 8y + 3z = 155, 5x + 4y - 10z = 65$$

(B) Use the fourth – order Runge Kutta method to solve  $dy/dx=x^2+y^2$ ,  $y(0)=1$ , Evaluate the value of Y when  $X=0.1$  7

**Q-4 Attempt all questions (14)**

(A) Draw the graph where  $V=\{1, 2, 3, 4\}$  and  $E=\{e1,e2,e3,e4,e5\}$ ,  $e1=e5=(1,2)$   $e2=(4,3)$ ,  $e4=(2,4)$  and  $e3=(1,3)$  7

(B) Use the Euler method to solve  $dy/dx=x^2+y^2$ ,  $y(0)=1$ , Evaluate the value of Y when  $X=0.1$  7

**Q-5 Attempt all questions (14)**

(A) Draw all non-isomorphic graph on 2 and 3 vertices 7

(B) Find out the value of Y when  $X=18$  Using Netwon’s Forward interpolation method. 7

X	5	10	15	20
Y	10	12	14	16

**Q-6 Attempt all questions (14)**

(A) Solve 7

the following system of equations by Gauss Elimination Method:

$$5x - 2y + 3z = 18,$$

$$X + 7y - 3z = -22$$

$$2x - y + 6z = 22$$

(B) Explain Isomorphism with diagram 7

**Q-7 Attempt all questions (14)**

(A) What is Graph? Explain Vertices and Edges with Diagram 7

(B) Find Complement of each element of Lattice(  $S30,GCD,LCM,1,30$ ) 7

**Q-8 Attempt all questions (14)**

(A) Find all the mint terms of a Boolean Algebra with three variables  $X1,X2,X3$ ..... 7

(B) Derive the Formula for Simpson’s 1/3 rule. 7

