SURESH GYAN VIHAR UNIVERSITY Accredited by NAAC with 'A' Grade		**INTERNAL ASSIGNMENT - 1**
Course	**BCA**	**Discrete Mathematics**
Year	2	
Total Marks:	**100**	

Q.1. Write answers for all the questions below. (20 marks each – Word limit – 500)

A. Let A = {k, l, m, n}. Let R= { (k , k) , (l , l) , (m , m) , (k , l) , (k , m) , (l , m) , (m , n) , (n , k) } ; S= { (n , k) , (n , l) , (n , m) , (m , k) , (m , l) , (l , K) , (k , k) } . Find the composition (a) ROR (b) SOS with diagram.

B. Describe the types of representation of relation with example.

C. i) A cricket–eleven is to be selected from amongst 10 batsmen,
8 bowlers and 2 wicketkeepers so as to include at least 5 batsmen, 4 bowlers and exactly 1 wicketkeeper. In how many ways can be done ?
ii)Find the value of +10C4+11C5+12C6

D. Using law of algebra of propositions, show that---
(i) (p ^ q) v p ≡ p(ii) (p ^ q) v (p ^ -q) ≡ p(iii) (p => q) ^ (r =>q) ≡ (p v r) =>q

E. Establish the equivalences---
(i) p ^ (-q v q) and p(ii) -(p <=> q) ≡ (p ^ q) v (-p ^ q)(iii) p => (q v r) ≡ (p => q) v (p => r)

SURESH GYAN VIHAR UNIVERSITY Accredited by NAAC with 'A' Grade		**INTERNAL ASSIGNMENT - 2**
Course	**BCA**	**Discrete Mathematics**
Year	2	
Total Marks:	**100**	

Q.1. Write answers for all the questions below. (20 marks each – Word limit – 500)

A. Define Eulerian graph. Show that a non-empty connected graph is Eulerian if and only if all its vertices are of even degree.

B. Establish the equivalences---
(i) p ^ (-q v q) and p(ii) -(p <=> q) ≡ (p ^ q) v (-p ^ q)(iii) p => (q v r) ≡ (p => q) v (p => r)

C. Show that set of N Natural numbers is a semi group under the operation x*y=max {x,y},is a monoid.

D. (a) Prove that the following is a group under multiplication modulo 11 {1,2,3,4,5,9}
(b) Write the laws of the algebra of operation of sets.

E. Find the truth table of the following propositions---
(i) –(pvq) v (-p^-q) (ii) (p ^ q) v (-p ^ q) v (p ^-q) v (-p ^ -q)(iii) p ^ (q v r) (iv) –p v q => -q