S4IT – LDMS Sem – III 2015-16 (C.A.-T.K.-T.)

Q. 7 Solve any three 15

1) Let (A, /) is a poset where A = {2, 3, 6, 12, 24, 36, 72} check whether A is lattice

2) Prove by mathematical induction if A_1 A_2 .... An are n - set then

$$\left(\bigcap_{i=1}^{n} Ai\right) = \bigcup_{i=1}^{n} \overline{Ai}$$

3) i) Prove that every field is an integral domain

ii) Let G be a group ab∈G then prove that

$$(a^{-1})^{-1} = a \qquad (ab)^{-1} = b^{-1}\, a^{-1}$$

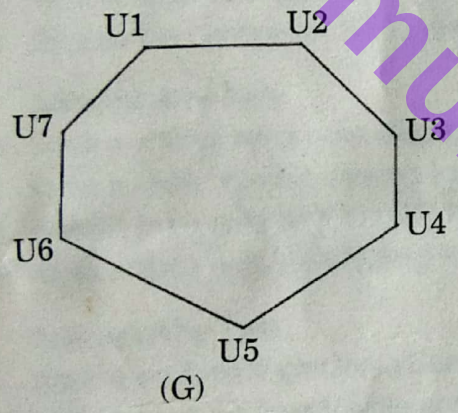
4) Define characteristic function with two properties

5) Check given {an} is solution of recurrance relation if $a_n = 5a_{n-2} + 9$

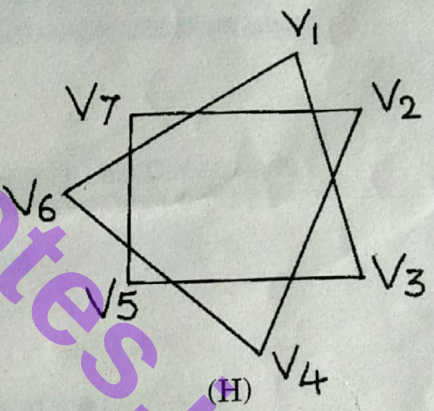
if i) $a_n = 0$ ii) $a_n = 1$ iii) $a_n = 3(-2)^{n+1}$

iv) $a_n = 5(-4)^n + 1$ v) $a_n = (-4)^n$

6) Define isomorphic group check following graphs are isomorphis



(G)



(H)

—— The End ——