

Q. 7 Solve any three

- 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 $A_1, A_2, \dots, A_n$ are n -set then

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

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

- ii) Let G be a group $ab \in G$ then prove that

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

- 4) Define characteristic function with two properties

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

if i) $a_n = 0$

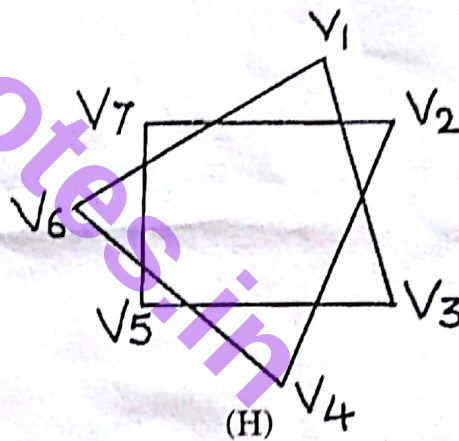
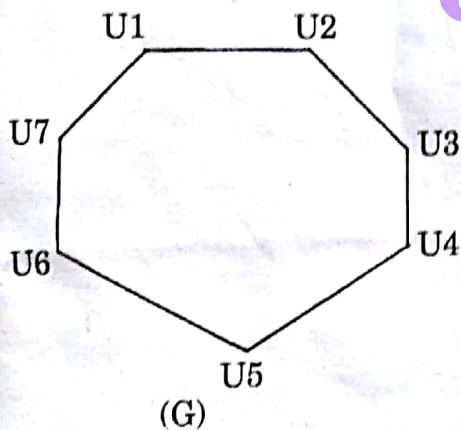
ii) $a_n = 1$

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



— The End —