


Name:	
Enrolment No:	

**UPES**  
**Class Test 1**

**Programme Name : B.Tech**

**Semester : III**

**Course Name : Discrete Mathematical Structure**

**Time: 40 Min.**

**Course Code : CSEG2006**

**Max. Marks:**

**Nos. of page(s) : 1**

**Batch: B51, B52, B53 and B54**

**Instructions: Do all questions.**

S. No.		Marks	CO
Q 1	Prove the validity of the following argument “If I get the job and work hard, then I will get promoted. If I get promoted, then I will be happy. I will not be happy. Therefore, either I will not get the job or I will not work hard.”		
Q 2	Show that $[(p \vee q) \wedge \sim(\sim p \wedge (\sim q \vee \sim r))] \vee (\sim p \wedge \sim q) \vee (\sim p \wedge \sim r)$ is tautology by using laws of logic.		
Q 3	Which elements of the poset $(\{2,4,5,10,12,20,25\},  )$ are maximal and which are minimal.		
Q 4	If $s$ is a valid conclusion from the premises $p \rightarrow q, p \rightarrow r, \sim(q \wedge r)$ and $s \vee p$ . If yes or no, justify		
Q 5	Let $f$ and $g$ be functions from the positive integers to the positive integers defined by $f(n) = n^2, g(n) = 2^n$ .  Find (i) $f \circ f$ , (ii) $g \circ g$ , (iii) $f \circ g$ , (iv) $g \circ f$		