Enrolment Number: _____

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B. TECH MID-SEM EXAMINATION
3rd SEMESTER
ACY-2022-23 (ODD SEM)

Subject Name (Code): Fundamentals of Signals and Systems (203106201) **Branch:** ELECTRICAL
Date: 03/08/2022 **Time:** 2:30 PM to 4:00PM **Total Marks:** 40

Sr. No.		Marks
Q.1	**(A) One-line Questions.**	05
	1. Give the definition of System.	
	2. What do you mean by One-Dimensional Signal?	
	3. Give any two examples of DT-Signal.	
	4. Write-down equation of CT Rectangular Pulse.	
	5. Give definition of Causal System.	
	(B) $x(n)=\left\{1,\underset{\uparrow}{1},1,1,1,1,\frac{1}{2}\right\}$, **Draw**: $x(n-1)+\delta(n-3)$ and $x(4-n)+u(n)$.	05
Q.2	**Attempt any four (Short Questions).**	12
	(1) Find even and odd part of following signal x(n), $x(n)=1$; *for* $n=$ 1 *to* 2	
	(2) Explain **1.** Even & Odd signal, **2.** Deterministic & Random Signal.	
	(3) Draw the given signal: $-r(t-1)+2r(t-2)+u(t)$.	
	(4) $x(n)=1$; *for* n = 1 *to* 2. Draw the given signal: $-2u(t)+u(t+1)-2u(t-1)$.	
	(5) Find out Even and Odd part of signal x(t).	
Q.3	**Attempt any two.**	08
	(1) Determine whether the system is static or not, Stable or not, Time variant or not and Causal or not. **System**: $y(n)=3x(5^n)$.	
	(2) Determine whether the system is static or not, Stable or not, Time variant or not and Causal or not. **System**: $y(t)=x(3t/2)$.	
	(3) Explain: **1.** Static & Dynamic System, **2.** Time Variant & Time Invariant system.	
Q.4	**(A)** Determine whether the system is static or not, Linear or not, Time variant or not, Causal or not and stable or not. **System**: $y(t)=x^3(t)+x(t+10)$	05
	(B) Explain any five CT - Standard test signal.	05
	OR	
	(B) Draw the given signal: $-u(t+3)+2u(t+1)-2u(t-1)+u(t-3)$.	05