PARUL UNIVERSITY
Faculty of Engineering & Technology
B Tech 3rd Semester Mid Examination

Subject Name: Signals AND Systems   **Subject Code: 203107207**

Branch: EC

[Date: 04/08/2022]   [Time: 2.30 PM to 4.00 PM]   [Total Marks: 40]

Sr. No.		Marks
Q.1	**(A) Fill in blanks**	05
	1. When delay operation is applied on ramp signal by two second then that signal will be shift on _____ side by two second.	
	2. Signal x(n+3) is _____ form of x(n).	
	3. System for which output depends on future input is known as _____system	
	4. System for which output depends on input of same time is called __system.	
	5.x(2n) is_____of x(n)	
	(B) Answer all questions	05
	1. Define, System.	
	2.Type of system. And Define CT system.	
	3. What is non periodic signal? give example of non periodic signals.	
	4. Define symmetrical signal	
	5. What do you mean by dynamic system?	
Q.2	**Attempt any four**	12
	(1) What is sampling and explain sampling process.	
	(2) State and explain sampling theorem.	
	(3)Give difference between time variant system and time invariant system	
	(4) Examine the following system for linearity. y(n)=x(-n).	
	(5) Given signals are x(n)= {4,3,2,1,0,1,2,3,4} ,	
	y(n)={ -1,--1,-1,-1,-1,-1,0,1,1,1,1,1} find out and draw x(n+2).y(6-n)	
Q.3	**Attempt any two**	08
	(1) Difference between static system and dynamic system.	
	(2) Determine the following signal is periodic or not x(t)=[cos(2t-π/3)]²	
	(3) Give the difference between energy and power signal in detail.	
Q.4		05
	(A) Decompose and draw even and odd part of the following signal	05
	$x(t) =t \qquad 0 \le t \le 1$	
	$=2\text{-}t \qquad 1 \le t \le 2$	
	(B) Determine if the following system described by	
	Y(t)= X(t-2)+X(2-t) ii) y(n)=nX(n) are memory less, causal, linear, time invariant, stable ?	
	OR	
	(B) Find out even and odd component of signal,	05
	x(t)=1+cos(t) + t² sin(t) +t³ sin(t)cos(t)	