



BUDDHA INSTITUTE OF TECHNOLOGY, GIDA, GORAKHPUR
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CLASS TEST-1 (EVEN SEMESTER 2022-23)

MAY-2023

Course: B. Tech
Subject: Signal System

Semester: IVth
Subject Code: KEC-403

M. M. 30

Time: 2:00 hrs

Roll No.

SECTION-A

1. Attempt all questions. Each question carry equal marks.

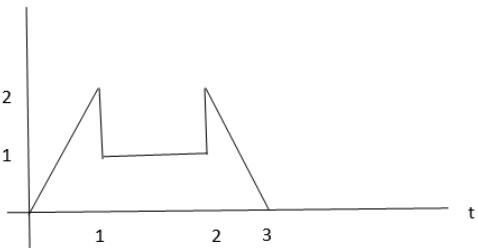
Marks: 5*1=5

Q. No.	Question	Level of Taxonomy	Course Outcome
a.	Find period of the signal $x(t) = A\sin(20\pi t) + B\sin(40\pi t)$.	L2	1
b.	Identify whether the given signal is periodic or not. If periodic then find period of $x(t)$. $x(t) = A\cos(100\pi t) + B\cos(50\pi t)$	L2	1
c.	Write short note on unit impulse function.	L2	1
d.	Find odd part of the signal $x(t) = 1 - 3t - 5t^2 + 4t^3 - 6t^4$	L2	1
e.	Plot the signal $u(n-1) - u(n-6)$	L2	1

SECTION-B

Attempt all questions. Each question carry equal marks.

Marks: 3*5= 15

Q. No.	Question	Level of Taxonomy	Course Outcome
2.	A signal $x(t)$ is given as:  Sketch the following signals (i) $x(t-2)$ (ii) $x(2t)$ (iii) $x(t/2)$ (iv) $x(-t)$ OR Write short note on the following signals (i) Even and odd signal (ii) Periodic and Aperiodic signal (iii) Energy and power signal	L2	1
3.	Determine and plot even and odd part of the signal: $X(t) = Ae^{-t}u(t)$	L2	1
4.	Determine and plot even and odd part of the signal: $X(n) = (1, -2, 2, -1, 3)$ OR	L2	1

	Identify whether the following given signal is energy signal or power signal: (i) $X(t) = r(t) u(t)$ (ii) $X(t) = e^{-t} u(t)$		
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SECTION-C

Attempt all questions. Each question carry equal marks.

Marks: 2*5=10

Q. No.	Question	Level of Taxonomy	Course Outcome
5.	Explain the following terms in brief: (i) Linearity (ii) Causality (iii) shift-invariance (iv) stability	L2	2
6.	Identify whether the following given signals are linear or not (i) $y(t) = x(t^2)$ (ii) $y(t) = x^2(t)$	L2	1