



Daffodil International University
Department of Electrical and Electronic Engineering
Faculty of Engineering
Midterm Examination, Summer – 2026

Course Code: 0714-217

Section: A, B, C, D, E, F, G

Full Marks: 25

Course Title: Continuous Signals & Linear Systems

Level-Term: L2-T1

Exam Date: June 27, 2026

Teacher's Initial: MFI, SRH

Time: 1.5 Hours

Answer all the following Questions

- Q1. A continuous-time signal $x(t)$ is shown in Fig. 1. Sketch and label each of the following signals. (a) $0.5x(t)$; (b) $x(2t)$; (c) $2x(t+3)$; (d) $x(t) - 3$; (e) $2x(-t)$ CO-1 5
C(3)

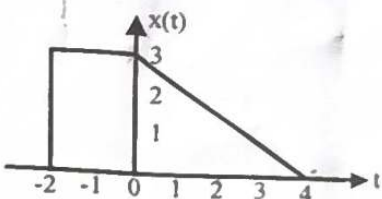


Fig. 1

- Q2. Identify whether or not each of the following signals is periodic. If a signal is periodic, find its fundamental period: CO-1 5
C(2)
(a) $x(t) = \sin \frac{2\pi}{3}t + \cos \frac{4\pi}{5}t$; (b) $x(t) = 3\cos 5t + 2\sin \left(\frac{\pi t}{2}\right)$.

- Q3. Identify whether the following signals are energy signals, power signals, or neither. CO-1 5
C(2)
(a) $x(t) = tu(t)$;
(b)

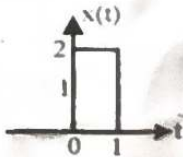


Fig. 2

- Q4. The input $x(t)$ and the impulse response $h(t)$ of a continuous time LTI system are given by $x(t) = e^{at}u(-t)$, $h(t) = e^{-at}u(t)$, $a > 0$. Compute the output $y(t) = h(t) * x(t)$. CO-1 5
C(3)

- Q5. Determine the even and odd components of the following signals: CO-1 5
C(3)
(a) $x(t) = e^{jt}$
(b)

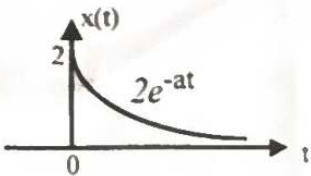


Fig. 3