



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)

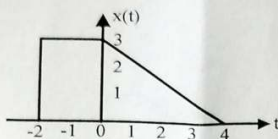


Fig. 1

- 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)

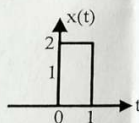


Fig. 2

- 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)

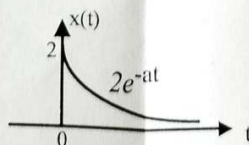


Fig. 3