

LAHORE UNIVERSITY OF MANAGEMENT SCIENCES
Department of Electrical Engineering

EE310 Signals and Systems
Quiz 01

Name: _____

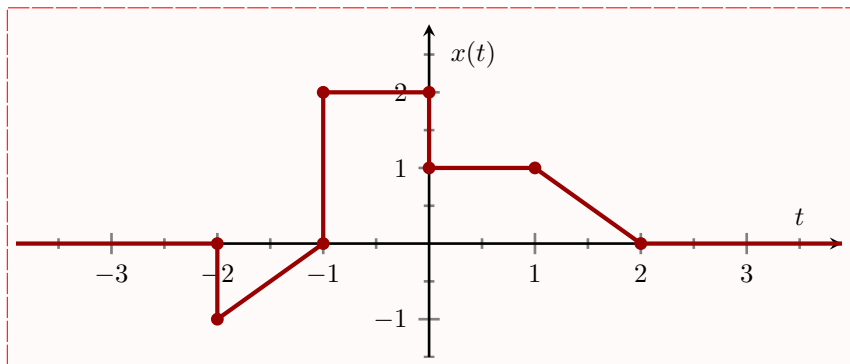
Campus ID: _____

Total Marks: 10

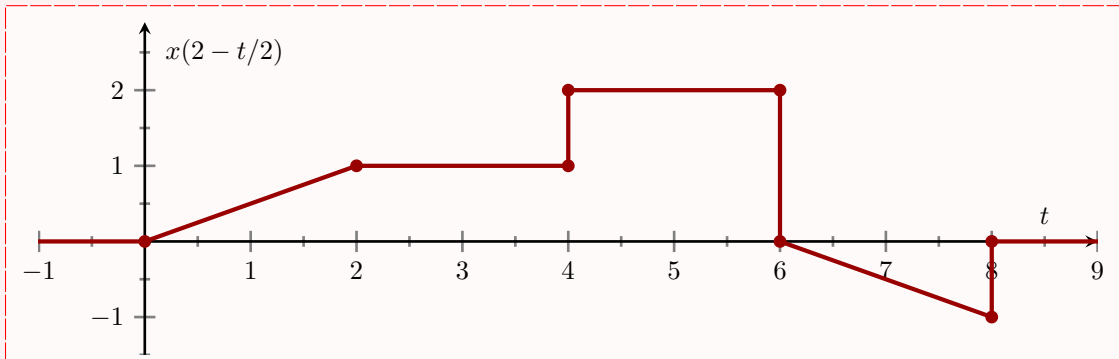
Time Duration: 15 minutes

Question 1 (6 marks)

Sketch and label $x(2 - t/2)$ for the CT signal $x(t)$ shown below.



Solution:



Question 2 (4 marks)

Determine whether the following signal is periodic or not. If the signal is periodic, determine its fundamental period. Briefly justify your answer.

$$x[n] = (-1)^n + j^n + \cos(\pi n/3) + 10.$$

Solution: $(-1)^n$ has period 4, $\cos(\pi n/3)$ has period $6 = 2 \times 3$, and $(-1)^n$ has period 2. The lowest common multiple is $4 \times 3 = 12$, so $x[n + 12] = x[n]$. \square