



# ISRA UNIVERSITY

Islamabad Campus

Department of Electrical Engineering  
Program: B.E. (Electrical)  
Semester - Fall 2018

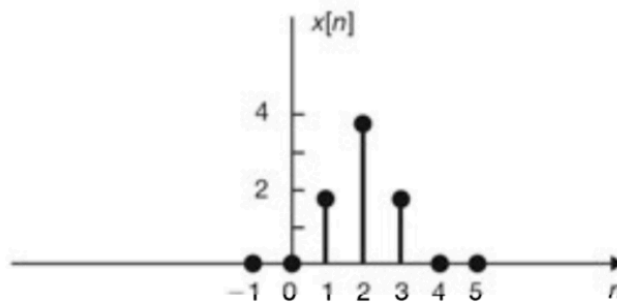
EL 313- Signal & Systems

Assignment – 2  
Marks: 20

**Due Date: 15/10/2018**  
**Handout Date: 08/10/2018**

Question # 1:

Sketch the even and odd components of the signal shown below:



Question # 2:

Determine whether or not the following signal is periodic. If a signal is periodic, determine its fundamental period:

$$x[n] = \cos^2 \frac{\pi}{8} n$$

Question # 3:

Determine whether the following signal is an energy signal, power signal or neither:

$$x(t) = t u(t)$$

Question # 4:

For the system described by the following equation, with the input  $x(t)$  and output  $y(t)$ , determine which of the following system properties are satisfied:

$$x(t) = t x(t - 2)$$

- Linear / Non-Linear
- Time Variant / Time Invariant
- With Memory / Without Memory

**Good Luck**