School of Computing Science and Engineering
Bachelor of Technology in Computer Science and Engineering
Mid Term Examination - May 2024

Duration : 90 Minutes
Max Marks : 50

Sem VI - R1UC620T - Digital Signal Processing

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1) If u(t) is a continuous unit step function then find out graph of + 2u (t - 2) and - 2u (t - 2). — K2 (2)

2) If U(n) is a discrete unit step function then draw the graph of signal if (a) U(n) is delayed by 2 unit (b) U(n) is advanced by 4 unit. — K1 (3)

3) If u(t) is a continuous unit step function then find out graph of (+2u (t - 1) - 2u (t - 2)). — K2 (4)

4) If u(t) is a continuous unit step function then find out graph of (+2u (t - 1) + 2u (t - 2)). — K2 (6)

5) Prove that summation of discrete unit impulse and all the delayed version of discrete unit impulse signals will give rise to discrete unit step signal. — K3 (6)

6) Discuss time delaying, time folding and time scaling with the help of appropriate example. — K3 (9)

7) With the help of appropriate example, discuss deterministic and non-deterministic signal. Also explain periodic and aperiodic signals using appropriate mathematical conditions and examples. — K4 (8)

8) Explain symmetric and antisymmetric signal in continuous domain and discrete domain with the help of appropriate examples. — K4 (12)

OR

Locate the poles and zeros for I(s) = (3s / (s+2)(s+4)) using pole-zero diagram and also obtain current i(t). — K4 (12)