

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2023

B.Tech-V Semester (ECE)

COURSE CODE(CREDITS):18B11EC511 (04)

MAX. MARKS: 15

COURSE NAME: Principles of Digital Signal Processing

COURSE INSTRUCTORS: Dr. Sunil Datt Sharma

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

- Q.1 Determine if the system described by the input –output equation $y(n) = nx(n)$ is linear or not 02 Marks, CO-1
- Q.2 Find the even and odd component of the $x(n) = [2 \ 2 \ 2 \ 2]$ 02 Marks, CO-1
- Q.3 Determine if the system described by the input –output equation $y(n) = x(-n)$ is time variant or not 02 Marks, CO-1
- Q.4 Find the periodic convolution of the sequences $x[n] = [1 \ 2 \ 3 \ 4]$, and $y[n] = [1 \ 1 \ 1 \ 1]$ using graphical method or matrix method 04 Marks, CO-1
- Q.5 Obtain the linear convolution of the sequences - $x(n) = \{1, 2, -1, 2\}$ and $h(n) = \{1, 2, 3\}$ using graphical methods and verify the answer using matrix method 04 Marks, CO-1
- Q.6 Differentiate the deterministic and random signals. 01 Mark, CO-1