JAYPEE UNIVERSITY OF INFORMATRION TECHNOLOGY, WAKNAGHAT

T-1, Examination, September, 2017

B.Tech, V Semester

COURSE CODE: 10B11EC512   MAX. MARKS: 15

COURSE NAME: Digital Signal Processing

COURSE CREDITS: 04   MAX. TIME: 1 HRs

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q.1	Write the properties of Z-transform: (a) Correlation property (b) Initial value theorem (d) Final value theorem (d) Differentiation property	2
Q.2	Find the even and odd part of the $x(n) = [1\ 1\ 1\ 1]$	01
Q.3	Find the convolution of the sequences $x(n) = 0.5^n u(n)$ and $h(n) = 3^n u(-n)$ using Z-transform.	03
Q.4	Find the convolution of the sequences $x(n) = a^n u(n)$ and $h(n) = b^n u(n)$	02

Q.5	Obtain the linear convolution of the sequences -
	$x(n) = \{1, 2, -1,\ 2, 3, -2, -3, -1, 1, 1, 2, -1\}$ and $h(n) = \{1, 2, 3\}$ using
	  1. Overlap save method.
	  2. Overlaps add method.
		04

Q.6	Find the unit step response of discrete time system which is represented by a difference equation is $y(n) = \frac{1}{2}y(n-1) + 2x(n)$.	03

EG-2, BT