06 + 02 = (08)

SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL NO : | | | | | | | | | | | | | Total number of pages:[2]

B.Tech. || ECE || 4th Sem. (RP)

Signals and Systems

Subject Code :BTEC-402

Paper ID : M118

(2011-2014 batch)

Time allowed: 3 Hrs **Max Marks: 60**

Important Instructions:

- **All Questions are Compulsory.**
- **Assume any missing data**

PART A (2×10)

Q. 1.	**Short Answer Questions.**
(a)	Differentiate between discrete tine and continuous time signals.
(b)	What do you understand by random and deterministic signals? Explain.
(c)	Find out the time period of the signal **x(t)= 3 Sin 300t**
(d)	What is use of Fourier transform? Explain
(e)	What do you mean by LTI systems? Explain.
(f)	Write and explain the equation of convolution integral.
(g)	What is Discrete Time Fourier Transform? Explain its equation.
(h)	What are random events? How probability theory is applied on them?
(i)	State and prove the initial value theorem of Z transform.
(j)	What are the different ways of representing the system? Describe.

PART B (5×8)

Q. 2.	Differentiate between a) Even and Odd signals b) Energy and power signals OR	CO1

	What are different types of signals? Explain with the help of diagram and equation of each type of signal.	
Q. 3.	What is the use of fourier series in continuous signals analysis? Give its mathematical explanation. OR What do understand by impulse response of a system? How is it used to study the frequency response of the system?	CO2
Q. 4.	State and explain the sampling theorem. Discuss the cases of under sampling, over sampling and critical sampling. OR Discuss different properties of discrete time fourier transform. Explain their mathematical equations.	CO3
Q. 5.	Differentiate between DTFT and Z transform. OR What are difference equations? How they are used to describe different types of discrete time systems?	CO3
Q. 6.	Differentiate between joint probability and conditional probability with the help of examples. OR What do understand by probability density function? What are different types of probability density functions? Explain with the help of their plots.	CO4