Total No. of Questions – [3]

Total No. of Printed Pages: 1

G.R. No.	

Papercode:- U239-131B-(T1)

OCTOBER 2019 / INSEM (T1)
S. Y. B.TECH. (E&TC) (SEMESTER – III)
COURSE NAME: SIGNALS & SYSTEMS
COURSE CODE: ETUA20181
(PATTERN 2018)

Time: [1 Hour]

[Max Marks: 20]

(*) Instructions to candidates:
1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Use of scientific calculator is allowed.
4) Use suitable data where ever required.

Qu. 1) Attempt any **one**

a) Classify even and odd part of the following function. [4 +4]
$x(t) = 3+2t+5t^2$
Classify whether given signal is an energy signal or power signal.
$x(t) = rect(t) \cos(\pi/4)t$

b) Sketch the waveform for the following signal. [4+4]
$y(n) = r(n+1) - r(n) - u(n-2)$
Determine whether signal $x(t)= tu(t)$ is energy signal or power signal

Qu. 2) Attempt any **one**

a) Check whether following systems are static or dynamic [4+4]
$y(t)=x(t)\sin 2t$ and $y(t) = x(t+1) +5$.
Determine whether the following system is time variant or not.
$y(t)= x(t) \cos x(t)$

b) Check whether the following system represented by input output relation is linear or not [4+4]
$y(t)=3x(t)+5$
Determine whether the following systems is causal or not
$y(t)=x(t) \sin(1+t)$ and $y(t) = \int_{t-4}^{t+4} x(\tau)d\tau$

Qu. 3) Attempt any **one**

a) Compute the Convolution integral $y(t)= h(t) * x(t)$ by graphical method. $x(t)= u(t)-u(t-2)$ $h(t)=e^{-2t}u(t)$ 4

b) Compute the Convolution of discrete time signal using graphical method $x(n)=u(n)-u(n-4)$ and $h(n)= \{1,1,1,1\}$ 4