

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Mid Semester Examination – Mar 2019

Sem: IV

Course: B. Tech in S.Y. (ECT)

Subject Name: Signals and Systems

Subject Code: BTExC404

Duration:- 1 Hr.

Max Marks:- 20

Date:- 14/03/2019

Instructions to the Students:

1. Check question paper correct or not.
2. Draw net and labeled signals.

		Co level	Marks
		1	6

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Q.1 Attempt following Questions

 1 In the sequence $x(n) = \{0,3,5,8,6,8,6,4\}$, $\overset{\uparrow}{x(2)} = \text{_____}$

(A) 0 (B) 3 (C) 8 (D) 6

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 2 If message is an analog signal than transmitter perform _____ operations to convert it to digital form
 (A) Sampling (B) Quantization (C) Encoding (D) All of these

 3 For continuous time signal $x(t) = x(t+T)$ is condition of _____
 (A) Periodicity (B) Linearity (C) continuity (D) Non-periodicity

 4 Impulse response is the response of the system, when applied input is _____
 (A) $u(n)$ (B) $\delta(n)$ (C) $r(n)$ (D) D.C. signal

 5 In Line Spectra phase angle is always measure with respect to _____ waves
 (A) Cosine (B) sine (C) Square (D) any

 6 The discrete time describe by $y(n) = \sin x(n)$ is_____

(A) Shift variant (B) Time variant (C) Time invariant (D) None of the above

Q.2 Solve Any Two of the following.

(A) Find whether the following signal are periodic if yes find periodicity
 $X(t) = 2 \cos \pi t + 7 \cos t$

(B) Determine whether the system is 1) Linear 2) causal 3) time invariant $y(t) = \cos x(t)$

(C) Compute the convolution sum where $x(n) = \{1 \ 1 \ 0 \ 1 \ 0\}$, $h(n) = \{1 \ -2 \ -3 \ 4\}$

3 X 2

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Q.3 Solve Any One of the following.

(A) Perform the convolution operation between two function in time domain $x_1(t) = u(t)$ and $x_2(t) = e^{-at}$

(B) Find whether the following signal is energy or power signal and find the value
 $x(t) = e^{-at} u(t)$

1

2

1

*** End ***