



BRAINWARE UNIVERSITY

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Brainware University
Barasat, Kolkata - 700125

Term End Examination 2022

Programme – B.Tech.(CSE)-2018/B.Tech.(CSE)-2019/B.Tech.(CSE)-2020

Course Name – Signals and Systems

Course Code - ESC(CSE)501

(Semester V)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) What are the conditions called which are required for a signal to fulfil to be represented as Fourier series?
- a) Dirichlet's conditions
b) Gibbs phenomenon
c) Fourier conditions
d) Fourier phenomenon
- (ii) What are the properties of continuous time Fourier series?
- a) Linearity, time shifting
b) Linearity, time shifting, frequency shifting
c) Linearity, time shifting, frequency shifting, time reversal, time scaling, periodic convolution
d) Linearity, time shifting, frequency shifting, time reversal, time scaling, periodic convolution, multiplication, differentiation
- (iii) Find the Laplace transform of $x(t) = u(t-2) - u(t-2)$.
- a) $\cos 2s/s$
b) $\cosh 2s/s$
c) $\sinh 2s/s$
d) $\sin 2s/s$
- (iv) When do Discrete Time Fourier Transform (DTFT) and Z-Transform (ZT) are equal?
- a) When $\sigma = 0$
b) When $r = 1$
c) When $\sigma = 1$
d) When $r = 0$
- (v) What is the nature of the following function: $y[n] = y[n-1] + x[n]$?
- a) Integrator
b) Differentiator
c) Subtractor
d) Accumulator
- (vi) The sampling frequency of a signal is $F_s = 2000$ samples per second. Find its Nyquist interval.
- a) 0.5 sec
b) 5 msec
c) 5 sec
d) 0.5 msec
- (vii) State space analysis is applicable even if the initial conditions are ____
- a) Zero
b) Non-zero
c) Equal
d) Not equal
- (viii) Which of the following is the process of 'aliasing'?
- a) Peaks overlapping
b) Phase overlapping
c) Amplitude overlapping
d) Spectral overlapping

