

**S.E.(Electronics / Electronics & Telecommunication Engineering)**

**SIGNALS & SYSTEMS**

**(2019Pattern) (Semester-II)**

1. State and explain the properties of continuous Time Fourier series.
2. Find Fourier transform of the following signals i)  $x(t)=-\delta(t)$  ii)  $x(t)=e^{-at}u(t)$
3. State and explain properties of Fourier transform.
4. What is Probability Density Function? Explain its properties.
5. Obtain Fourier transform of rectangular pulse:  $x(t)=A \text{ rect}(t/T)$ .
6. What is CDF? Explain its properties.
7. Determine Laplace transform of  $X(s) = 4 / s(s+2)(s+4)$ .
8. Find Laplace transform of  $x(t) = e^{-5t} [u(t) - u(t - 5)]$  and its ROC.
9. Find the Fourier transform of  $x(t) = \text{rect}(t/T)$  and sketch the magnitude and phase spectrum.
10. State and explain properties of CTFT.
11. State the Dirichlet conditions for existence of Fourier transform.
12. Find the Fourier transform of :      1)  $x(t) = \cos(\omega_0 t)$       2)  $x(t) = e^{-5t}u(t)$ .
13. Find the unilateral Laplace transform of :      1)  $x(t) = \cos(\omega_0 t)$       2)  $x(t) = u(t)$ .
14. Explain Gaussian probability model with respect to its density and distribution function
15. A box contains 6 white balls, 3 blue balls and 2 yellow balls. A ball is drawn at random. Find probability that i) ball is not yellow ii) ball is either white and yellow iii) In second random experiment if two balls are drawn what is probability that second ball is blue if first ball is white.