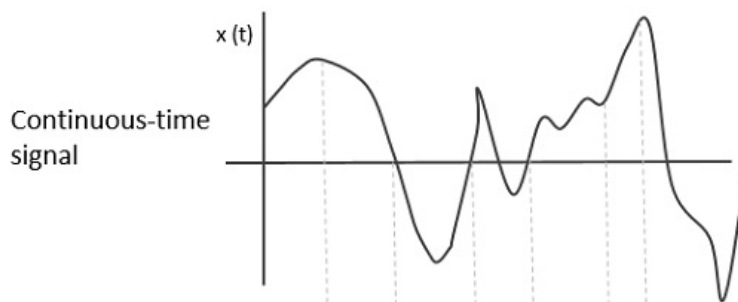


**B. Tech. (IT & Mathematical Innovation)**  
**Sem II : Paper 911213: Electronics at Work & Circuit Simulation**

**Assignment 19: Signals and Systems**

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- Q1: What is a signal? What is a system?
- Q2: What is a CTCA signal or an Analog Signal or CT signals?
- Q3: What is a DTCA signal or DT signals?
- Q4: What is a DTDA signal or Digital signal?
- Q5: What is signal sampling?
- Q6: How sampling is done? Define Sampling Frequency.
- Q7: Define bandwidth of a signal. (W)
- Q8: State sampling theorem.
- Q9: Define Nyquist Frequency of a sampled signal.
- Q10: Define a scalar valued signal and a vector valued signal.
- Q11: Is  $x(t) = \cos(2\pi ft)$  a signal? Is it a scalar signal?
- Q12: Is  $x(t) = t+jt$  a signal? Is it a scalar signal?
- Q13: Show sampled signal for the given continuous time signal.



- Q14: How do analog signals are produced?
- Q15: How do DT signals are produced?
- Q16: How do Digital signals are produced?
- Q17: What is an audio signal? What is audio signal processing?
- Q18: What is video signal? How is it processed?
- Q19: What is convolution and correlation?