

Department of Electrical Engineering

Assignment

Date: 07/05/2020

Course Details

Course Title: Advanced Computer Networks

Module: _____

Instructor: _____

Total Marks: 20

Student Details

Name: _____

Student ID: _____

Q1.	(a)	A non-periodic composite signal contains frequencies from 10 to 30 KHz. The peak amplitude is 10 V for the lowest and the highest signals and is 30 V for the 20-KHz signal. Assuming that the amplitudes change gradually from the minimum to the maximum, draw the frequency spectrum	Marks 5
Q2.	(a)	A TV channel has a bandwidth of 6 MHz. If we send a digital signal using one channel, what are the data rates if we use one harmonic, three harmonics, and five harmonics?	Marks 5
Q3.	(a)	We have sampled a low-pass signal with a bandwidth of 200 KHz using 1024 levels of quantization. a. Calculate the bit rate of the digitized signal. b. Calculate the SNRdB for this signal. c. Calculate the PCM bandwidth of this signal.	Marks 5
Q4.	(a)	What is the Nyquist sampling rate for each of the following signals? a. A low-pass signal with bandwidth of 200 KHz? b. A band-pass signal with bandwidth of 200 KHz if the lowest frequency is 100 KHz?	Marks 5