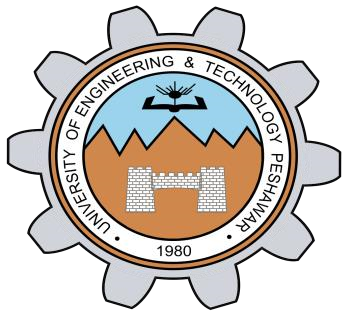
# Lab Report No 5



**Digital Communication Systems**

**Submitted By: Hafiz Qazi Ahmad Khan**

**Registration No: 20pwcse1877**

# Section: A

**Submitted To: Engr. Ihsan-Ul-Haq**

**Dated: 11-december-2022**

# Department of Computer Systems Engineering

**University of Engineering and Technology Peshawar**

**CSE 402L: Digital Communication Systems**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Demonstration of**  **Concepts** | **Poor (Does not meet expectation (1))**    The student failed to demonstrate a clear  understanding of the assignment concepts | **Fair (Meet**  **Expectation (2-3))**    The student demonstrated a clear understanding of some of the assignment concepts | **Good (Exceeds**  **Expectation (4-5)**    The student demonstrated a clear understanding of the assignment concepts | **Score**      **30%** |
| **Accuracy** | The student completed (  <50%) tasks and provided MATLAB code and/or  Simulink models with errors. Outputs shown are  not correct in form of graphs  (no labels) and/or tables along with incorrect analysis or remarks. | The student completed partial tasks (50% - <90%)  with accurate MATLAB code and/or Simulink  models. Correct outputs are  shown in form of graphs  (without labels) and/or tables along with correct analysis or remarks. | The student completed all required tasks (90%-100%) with  accurate MATLAB code and/or  Simulink models. Correct outputs are shown in form of labeled graphs and/or tables  along with correct analysis or remarks. | **30%** |
| **Following Directions** | The student clearly failed to follow the verbal and written  instructions to successfully complete the lab | The student failed to follow the some of the verbal and written instructions to  successfully complete all requirements of the lab | The student followed the verbal and written instructions to successfully complete requirements of the lab | **20%** |
| **Time Utilization** | The student failed to complete even part of the lab in the allotted amount of  time | The student failed to complete the entire lab in the allotted amount of time | The student completed the lab in its entirety in the allotted amount of time | **20%** |

**Lab No: 5.**

**Title: Compare Double-Sideband and Single-Sideband Amplitude Modulated Signal using Matlab**

(Create and Explore the dsp.SpectrumAnalyzer object and set its properties.) **Provide .m file with detailed comments**

**TASKS:**

**Task 1: Set the sampling frequency to 100 Hz and carrier frequency to 10 Hz. Generate a time vector having a duration of 100 s.**

**fs = 100; % Sampling Frequency fc = 10; % Carrier Frequency t = (0:1/fs:100)';**

**OUTPUT:**

**Task 2: Create single tone sinusoidal signal 1 Hz Signal x = sin(2\*pi\*t);**

**OUTPUT:**

**Task 3: Carrier Signa yc = sin(2\*pi\*fc\*t); Plot the modulating Signal and Carrier Signal**

**OUTPUT:**

