The Islamia University of Bahawalpur

**F**aculty **o**f **E**ngineering **&** **T**echnology



Student Lab Manual

**Digital Signal Processing**

ELEN-02626

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**CMS-ID:**

**Class : BSc-CSE**

**Batch: 2020-24**

**Semester: 6th**

**DEPARTMENT OF COMPUTER SYSTEMS ENGINEERING**

**LAB RUBRICS**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Roll#\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**COURSE NAME: DIGITAL SIGNAL PROCESSING CS (PRACTICAL)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **LAB PERFORMANCE INDICATOR** | SUBJECT KNOWLEDGE | DATA ANALYSIS AND INTERPRETATION | ABILITY TO CONDUCT EXPERIMENT | PRESENTATION | CALCULATION AND CODING | OBSERVATION/RESULTS | SCORE |
| **OBJECTIVE NO:** |
| **01** | **To review Matlab Commands for DSP and Generation of digital signals** | | | | | | |
|  |  |  |  |  |  |  |
| **02** | **To perform Sampling of Signals using Matlab** | | | | | | |
|  |  |  |  |  |  |  |
| **03** | **To perform Quantization of Signals** | | | | | | |
|  |  |  |  |  |  |  |
| **04** | **To evaluate Convolution of discrete-time signals using Matlab** | | | | | | |
|  |  |  |  |  |  |  |
| **05** | **To evaluate Correlation function of discrete-time signals in Matlab** | | | | | | |
|  |  |  |  |  |  |  |
| **06** | **To perform z-transform and check stability of discrete-time systems in z-domain** | | | | | | |
|  |  |  |  |  |  |  |
| **07** | **To perform inverse z-transform of discrete time systems** | | | | | | |
|  |  |  |  |  |  |  |
| **08** | **To understand TMS320C6713 DSK DSP Kit** | | | | | | |
|  |  |  |  |  |  |  |
| **09** | **To Implement Mathematical Algorithms and perform Advanced programming using TMS320C6713 DSK Kit** | | | | | | |
|  |  |  |  |  |  |  |
| **10** | **To analyze discrete time signals in Frequency Domain using Matlab** | | | | | | |
|  |  |  |  |  |  |  |
| **11** | **To analyze discrete time systems in Frequency Domain using Matlab** | | | | | | |
|  |  |  |  |  |  |  |
| **12** | **To design FIR filter using FDAtool** | | | | | | |
|  |  |  |  |  |  |  |
| **13** | **To design IIR filter using FDAtool** | | | | | | |
|  |  |  |  |  |  |  |
| **14** | **To understand Basics of Sound Processing using Matlab** | | | | | | |
|  |  |  |  |  |  |  |
| **15** | **Complex Engineering Problem** | | | | | | |
|  |  |  |  |  |  |  |

**LIST OF EXPERIMENTS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Module** | **Topics** | **Book** | **PLO** | **CLOs** | **BT**  **Domain** |
| 1 | To review Matlab Commands for DSP and Generation of digital signals. | Lab  Manual | 5 | 4 | P5 |
| 2 | To perform Sampling of Signals using Matlab |
| 3 | To perform Quantization of Signals |
| 4 | To evaluate Convolution of discrete-time signals using Matlab |
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| 15 | CEP |