

GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER-II • EXAMINATION – SUMMER - 2017

Subject Code: 2723101**Date: 29/05/2017****Subject Name: Virtual Biomedical Instrumentation****Time: 02:30 PM to 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Draw and Explain the architecture of virtual Instrument. **07**
(b) Discuss the merits and demerits of distributed virtual instrument. **07**
- Q.2** (a) Give detail comparison of Graphical and Textual Programming style. **07**
(b) What is the requirement of analog signal conditioning? Explain various components of analog signal conditioning for signal processing. **07**
- OR**
- (b) What is aliasing? Explain antialiasing filters in detail. **07**
- Q.3** (a) Enlist various types of A-to-D converters. Explain any one in detail. **07**
(b) 1. Give difference between local and global variable. **07**
2. Explain cluster with suitable example.
- OR**
- Q.3** (a) Enlist various types of D-to-A converters. Explain any one in detail. **07**
(b) What is quantization? Explain quantization error in detail. **07**
- Q.4** (a) 1. Explain concept of sub VI with example. **07**
2. Give difference between case and sequence structure used in programming.
(b) Explain the applications of virtual biomedical instrumentation for monitoring and research. **07**
- OR**
- Q.4** (a) Explain role of Virtual instrumentation in any control system application with example. **07**
(b) Explain design of virtual instrumentation for digital millimeter application. **07**
- Q.5** (a) Explain designing aspects for Image acquisition and processing in virtual instrumentation. **07**
(b) Explain technical aspects of 4-20mA current loop. **07**
- OR**
- Q.5** (a) Explain pin description, limitation and standards of serial communication techniques. **07**
(b) Explain Physical bus structure and advantages of GPIB. **07**
