

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII EXAMINATION – Summer 2015

Subject Code:170806**Date: 06/05/2015****Subject Name: Digital Control System****Time: 02.30pm-05.00pm****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) Explain Open Loop & Close Loop Control system with Block diagram. **07**
 (b) Comparison between digital Control System & analog control system with block diagram. **07**
- Q.2** (a) What is Sampling Frequency ? Explain sampling & Quantization effect in detail **07**
 (b) Explain the process of signal Conversion & Coding. **07**
- OR**
- (b) Explain sample & Hold Circuit. **07**
- Q.3** (a) Explain the design Specification & configuration of basic digital control system. **07**
 (b) Explain BIBO stability in detail. **07**
- OR**
- Q.3** (a) Explain Properties of Z-transform **07**
 (b) Explain Aliasing effect with wave form. **07**
- Q.4** (a) Explain the reconstruction of analog signal. **07**
 (b) Write a Short note on Digital Temperature Control System. **07**
- OR**
- Q.4** (a) Write a Short note on Digital Position control system. **07**
 (b) Compare Proportional -Integral controller & Proportional Controller. **07**
- Q.5** (a) Design Phase Lead Compensator using frequency response plot. **07**
 (b) Explain the effect of high Gain on the control system. **07**
 Which are the limiting factors for High Gain?
- OR**
- Q.5** (a) Explain the specification for z-plan in control system design. **07**
 (b) Design Phase Lag compensator using root locus plot. **07**
