

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (OLD) - EXAMINATION – SUMMER 2017

Subject Code: 161702

Date: 08/05/2017

Subject Name: Process Control

Time: 10:30 AM to 01:00 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) Explain split range control scheme with neat sketch of suitable example. **07**
(b) Explain selective and override control with neat sketch. **07**
- Q.2** (a) Enumerate feed forward control scheme with neat application diagram. **07**
(b) Enumerate cascade control scheme with neat application diagram. **07**
- OR**
- (b) Enumerate Zigler Nicholas closed loop method for controller tuning. **07**
- Q.3** (a) Explain reaction curve method for controller tuning. **07**
(b) Explain the correlation of different tuning constants. **07**
- OR**
- Q.3** (a) Give PID algorithm with explanation comments. **07**
(b) What do you mean by differential gap? Explain the on-off control with suitable example. **07**
- Q.4** (a) Explain the need of PI control action in place of P control action alone. **07**
(b) Explain PD control scheme in detail. **07**
- OR**
- Q.4** (a) Explain multispeed floating point control with neat waveforms. **07**
(b) Give complete classification of controllers with special feature of each one. **07**
- Q.5** (a) Explain series structure of any simple system with neat sketches. **07**
(b) Explain the modeling of MIMO system with suitable example. **07**
- OR**
- Q.5** (a) Explain modeling steps and linearization concepts for mathematical modeling of process dynamics. **07**
(b) List out control objective and benefits from Process Control. **07**
