

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) - EXAMINATION – SUMMER 2017****Subject Code: 2171710****Date: 06/05/2017****Subject Name: Process Dynamics and Control****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) Explain the dynamic behavior of the non linear first order system. **08**
- (b) Draw and explain block diagram of process of cement preparation in cement plant **06**
- Q.2** (a) Write short note on liquid to liquid heat exchangers **08**
- (b) How to develop mathematical model of any process? **06**
- OR**
- (b) Give basic scheme for feed-forward control of heat exchanger **06**
- Q.3** (a) Explain the control of overhead and bottom composition in distillation column. **08**
- (b) Explain with the help of steady state model, the variables that fix the distillation operation. **06**
- OR**
- Q.3** (a) List the distillation equipments. Explain the column feed control in details. **08**
- (b) Write short note on distillate reflux flow control **06**
- Q.4** (a) Write short note two element boiler control. **08**
- (b) Explain feed forward control of feed water in boiler. **06**
- OR**
- Q.4** (a) Write short note on burner management system. **08**
- (b) Write short note on boiler optimization. **06**
- Q.5** (a) Explain the temperature control in chemical reactors. **08**
- (b) Write short note on sequential and logic control in batch process. **06**
- OR**
- Q.5** (a) Explain basic flow chart of unit operations of paper industries. **08**
- (b) Write short note on pH control in chemical reactors. **06**
