

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII • EXAMINATION – SUMMER 2013

Subject Code: 171702**Date: 24-05-2013****Subject Name: Programmable Automation Controller****Time: 02.30 pm - 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 overall PLC system and connections. **07**
(b) Explain PLC CPU power supply in detail. **07**
- Q.2** (a) Discuss solid state memory. **07**
(b) Discuss levels of industrial control. **07**
- OR**
- (b) Discuss advantages and disadvantages of PLC. **07**
- Q.3** (a) Explain LVDT in detail. **07**
(b) Discuss fail safe circuits with examples. **07**
- OR**
- Q.3** (a) There are two banks of three machines on each sides A and B, each with its own start and stop buttons. Only one of each branch may run at a time. Construct circuit with appropriate inter lockings. **07**
(b) Explain PLC skip function and its application. **07**
- Q.4** (a) Draw and explain gate relay and PLC equivalent of any four gates. **07**
(b) Discuss input and output registers. **07**
- OR**
- Q.4** (a) Discuss PLC move functions. **07**
(b) Explain PLC register shift functions. **07**
- Q.5** (a) Discuss TON, TOF ladder diagram with examples. **07**
(b) A machine, M, is to be turned on either when count A goes up to 11 or when count B goes up to 16. One stop button or switch resets entire process. Construct PLC ladder and explain. **07**
- OR**
- Q.5** (a) Explain PLC sequencer function with example. **07**
(b) Prepare minimum robot control circuit and program. **07**
