

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) - EXAMINATION – SUMMER 2017****Subject Code: 2172411****Date: 02/05/2017****Subject Name: Industrial Automation****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) What are the main components of Automation system? **04**
(b) What do you understand by Automation? Explain in details advantages of Automation. **04**
(c) Draw P.L.C. system layout & explain the functionality of all inter-connected parts. **06**
- Q.2** (a) Explain in details Input/output Modules of PLC. **07**
(b) Define SCADA systems. Explain in details SCADA systems. **07**
- OR**
- (b) Describe PLC scanning considerations in detail. **07**
- Q.3** (a) Explain the Network Access Protocols of DCS and list advantages and drawbacks of various types of Network Access Protocols. **07**
(b) List DCS Supervisory Computer tasks and explain each in brief. **07**
- OR**
- Q.3** (a) Explain D.C.S.integration with P.L.C'S & computers. **07**
(b) Explain the different levels of DCS systems. **07**
- Q.4** (a) Explain about current trends in computer control of process plants. **07**
(b) Explain in detail Master Terminal Unit. **07**
- OR**
- Q.4** (a) Draw and explain ON Delay and Off-Delay timer ladder diagrams. **07**
(b) Explain in details Data Acquisition and process control system. **07**
- Q.5** (a) Compare SCADA, DCS, and PLC in tabular forms. **07**
(b) What are the benefits of SCADA system? Explain in details RTU. **07**
- OR**
- Q.5** (a) Write a technical note on current trends in Automation systems. **07**
(b) Explain the P.L.C. arithmetic functions & draw block format of each. **07**
