

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VIII EXAMINATION – SUMMER 2016****Subject Code:181701****Date:10/05/2016****Subject Name:Control Systems Architecture****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) With necessary diagram and figures explain basic structure of automation system. **07**  
(b) Briefly write about the components of a SCADA system. **07**
- Q.2** (a) Give difference between discrete, continuous and hybrid control strategies. **07**  
(b) Explain different types of logs and reports configurable on DCS. **07**
- OR**
- (b) Write a detailed note on network control system. **07**
- Q.3** (a) Describe about remote terminal unit with application and hardware structure details. **07**  
(b) Write about selection of alarms and alarm priority settings. **07**
- OR**
- Q.3** (a) Discuss about intelligent operator panels as an advanced human interface. **07**  
(b) Mention about scheduling of tasks in automation systems software structure. **07**
- Q.4** (a) State importance of control subsystem and discuss about its' structure. **07**  
(b) Discuss basic and mimic approaches of constructing human interface panels. **07**
- OR**
- Q.4** (a) Write a note on isolation and protection of instrumentation subsystem. **07**  
(b) Explain controller capacity expansion considering hardware structure of controller. **07**
- Q.5** (a) Discuss about common configurations of supervisory station and application station with standby. **07**  
(b) List out the process industries where DCS is used and explain any one application of DCS in the process industry. **07**
- OR**
- Q.5** (a) Brief about higher level programming languages covered by IEC 61131-3 standard. **07**  
(b) Discuss feature, advantages and disadvantages of centralized I/O and remote I/O. **07**

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