Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY **BE - SEMESTER-VIII EXAMINATION - WINTER 2015**

Subject Code:181701 Date: 09/12/2015

Time: 2:30pm to 5:00pm **Total Marks: 70**

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- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks. (a) Discuss the structure of control sub system and explain various steps **Q.1** 07 Performed by it. **(b)** Explain watchdog module of processor subsystem. 07 (a) List various components required in instrumentation sub-system for input 07 **Q.2** switching instrumentation devices and explain their input/output relationship. (b) State the advantages and disadvantages of centralized I/O (CIO), Remote I/O 07 (RIO) and Field bus I/O (FIO). OR (b) Draw automation system structure for distributed process. Brief about the 07 purpose of Front end processor (FEP) and different ways of realization of FEP. **Q.3** With neat sketch explain the function of each layer in the software structure of 07 the controller. **(b)** Draw the structure of SCADA and explain it in detail. 07 OR **07** 0.3 (a) Explain the followings. (i) Regulatory PV point (ii) Regulatory control point Explain the configuration of operator/monitoring functions. 07 07

Write a short note on" Isolation and protection in automation system". 0.4 (a) **(b)** Explain about strategy for alarm systems performance improvement.

OR Draw hardware structure layout for typical RTU. Discuss typical requirements 0.4 (a) 07 for an RTU system. **07**

(b) Write a short note on "Displays available in DCS."

What is sequential flow chart, discuss the guidelines for the use of sequential **Q.5** 07 (a) flow chart for Phase programming.

(b) Explain the configuration of functional block diagrams in DCS.

OR

Q.5 (a) Explain the followings

(i) Alarm Prioritization (ii) Alarm suppression

(b) Write short note Hazard and Operability studies (HAZOP).

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