

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-VIII Examination May 2012****Subject code: 181701****Subject Name: Control Systems Architecture****Date: 10/05/2012****Time: 10.30 am – 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) Discuss the structure of control sub system and explain various steps performed by it. **07**
- (b) List various components required in instrumentation sub-system for input switching instrumentation devices and explain their input/output relationship **07**

- Q.2** (a) With necessary sketch discuss the hardware structure of the controller and explain it in detail. **07**
- (b) With neat sketch explain the function of each layer in the software structure of the controller **07**

OR

- (b) Draw the physical and logical structure of Distributed control system and explain in detail. **07**

- Q.3** (a) Explain the following terms **03**
(i) Hot Standby (ii) Cold Standby
- (b) Write short note on “Front end Processor” **04**
- (c) With neat sketch explain various levels in Distributed control system and explain the information flow in DCS. **07**

OR

- Q.3** (a) With neat sketch explain the structure of remote I/O and discuss its advantages and disadvantages. **07**
- (b) Draw the structure of SCADA and explain it in detail. **07**

- Q.4** (a) Explain the followings **08**
(i) Regulatory PV point
(ii) Regulatory control point
- (b) What is sequential flow chart, discuss the guidelines for the use of sequential flow chart for Phase programming **06**

OR

- Q.4** (a) Discuss the strategy for the designing of Alarm system. **07**
- (b) Discuss various types of Displays available with DCS. **07**

- Q.5** (a) Explain the configuration of functional block diagrams in DCS. **07**
- (b) Explain the followings **07**
(i) Alarm Prioritization
(ii) Alarm suppression

OR

- Q.5** (a) Explain the configuration of operator/monitoring functions. **07**
- (b) Write a short note on “Isolation and protection in automation system”. **07**
