

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (old) - EXAMINATION – SUMMER 2018

Subject Code:181701

Date:02/05/2018

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) Draw the basic structure of automation system and explain the control subsystem in brief. **07**
(b) List various active display elements used in HMI and explain its function. **07**
- Q.2** (a) Discuss the structure of instrumentation subsystem. Also discuss interfacing standard associated with it. **07**
(b) Explain software structure of controller. **07**
- OR**
- (b) Explain major modules of hardware structure of controller. **07**
- Q.3** (a) Explain hybrid control system with suitable example. **07**
(b) Give comparison between operator station and operator panel. Also state advantages and disadvantages of operator station. **07**
- OR**
- Q.3** (a) Write a short note on front end processor. **07**
(b) Explain two step controls with dead band feature. **07**
- Q.4** (a) Explain watchdog module with its timing sequence. **07**
(b) List out programming language available in DCS and explain any one in detail. **07**
- OR**
- Q.4** (a) State advantages and disadvantages of centralized I/O and Remote I/O. **07**
(b) Write a short note on availability enhancement in DCS. **07**
- Q.5** (a) Draw and explain structure of SCADA system and also explain RTU. **07**
(b) Explain PID control algorithm. **07**
- OR**
- Q.5** (a) Explain application of DCS in oil and gas processing.. **07**
(b) Write a short note on “Strategy of Alarm system Design”. **07**
