Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (old) - EXAMINATION - SUMMER 2017 **Subject Code:181701** Date:02/05/2017 **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. (a) Describe switching and integrating instrumentation devices for instrumentation 0.1 07 subsystems. **(b)** Discuss about hot, cold and no standby schemes. 07 **Q.2** (a) Briefly narrate application areas of automation systems for discrete, continuous **07** and batch process automation. Explain configuration of control functions for DCS configuration. **(b)** 07 (b) Mention about interfacing of control subsystem with other two subsystems of **07** automation system. With suitable example discuss FBD higher level programming language. 07 Q.3 Compare functions of the modern operator station with those of the traditional **07** mimic control panel. OR Q.3Discuss about front end processor for automation of distributed processes. 07 (a) **(b)** Brief about programmable automation controller. 07 **Q.4** Give details about centralized I/O and list advantages and disadvantages for it. 07 **(b)** Discuss scheduling of tasks in automation systems software structure. 07 OR 0.4 Introduce and compare the terms SCADA, DCS, PLC and smart instrument. 07 (a) Explain design of field sensors for generating alarms. **(b)** 07 Q.5 Write about functional subsystems considering hardware structure of controller. **07** (a) Describe use of DCS in oil and gas processing environment. 07 **(b)** (a) Write a note on operator panel for human interface subsystems. Q.5 **07** Explain discrete control strategy for open loop and sequential control with **07** interlocks.
