



GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 2181922

Date: 02/05/2018

Subject Name: Automation(Department Elective III)

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) Why automation is necessary in Industry **03**
(b) Describe USA principle **04**
(c) What is Automation and Explain the types of Automation. **07**

- Q.2** (a) Explain the level of automation. **03**
(b) Differentiate the pneumatics system and hydraulic system **04**
(c) Explain the different component used in Pneumatic System with neat diagram. **07**

OR

- (c) Explain the different component used in Hydraulic System with neat diagram. **07**

- Q.3** (a) Define PLC with example **03**
(b) Describe the classification the hydraulic actuator and explain any one. **04**
(c) What is the role of PLC in automation and also explain the application of PLC in automation with suitable example. **07**

OR

- Q.3** (a) Describe the role of sensors in Robotics **03**
(b) Describe the application of microcontroller for automations **04**
(c) Explain the different types of sensors in robotics and also describe the working of any five sensors **07**

- Q.4** (a) What are the selection criteria of Actuator for Robot **03**
(b) Explain robot control system **04**
(c) Explain different type of actuator in robotics with neat sketch **07**

OR

- Q.4** (a) Explain CMM **03**
(b) Describe automated material handling system. **04**
(c) Explain the different component in Microcontroller. **07**

- Q.5** (a) Define Break-even point with neat diagram. **03**
(b) Explain feasibility of automation in Indian market. **04**
(c) Describe the parameters and procedure set the automation in the machine shop design. **07**

OR

- Q.5** (a) Differentiate transducer and sensor. **03**
(b) Describe the AGV and explain any one in details. **04**
(c) Explain the application of automated storage and retrieval system in automation with sketch. **07**
