

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII(NEW) EXAMINATION – SUMMER 2019

Subject Code:2181922

Date:13/05/2019

Subject Name:Automation

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) Necessity of automation in Industry. 03
(b) Short note on USA principle. 04
(c) What is Automation? Explain different types of Automation. 07
- Q.2** (a) Describe 3-way valve hydraulic amplifier. 03
(b) Write a note on (i) Hydraulic accumulator and unloading valve, 04
(ii) Relief valve and direction control valve.
(c) Explain the different component used in Hydraulic System with neat diagram. 07
- OR**
- (c) List out the basic components of a pneumatic circuit. Explain with neat diagram. 07
- Q.3** (a) Differentiate the pneumatics system and hydraulic system. 03
(b) Describe the application of robots with example. 04
(c) Describe the working of microcontroller with example. 07
- OR**
- Q.3** (a) What is the role of PLC in automation? 03
(b) Explain the application of PLC in automation with suitable example. 04
(c) Define PLC with example Describe the classification the hydraulic actuator and explain any one. 07
- Q.4** (a) Explain CMM. 03
(b) Explain the scope of automation in Indian industries. 04
(c) What are the criteria for selection of an industrial robot? Explain in brief. 07
- OR**
- Q.4** (a) Explain the different types of actuators in robotics. 03
(b) Describe automated material handling system. 04
(c) List out the different types of sensors in robotics. Describe the working of any five sensors. 07
- Q.5** (a) Explain robot control system. 03
(b) What is an automation migration strategy? 04
(c) Describe the parameters and procedure set the automation in the Casting shop. 07
- OR**
- Q.5** (a) Define Break-even point with sketch. 03
(b) Explain the ASRS 04
(c) List the different types of AGV. Explain any three with neat sketch. 07
