

Seat No.: _____

Enrolment No. _____

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 |
