

Government College of Engineering, Aurangabad
(An Autonomous Institute of Government of Maharashtra)

B. E. (EEP) Examination

End Semester Examination NOV 2016
EE 448: Industrial Automation and Control

Time: Three Hours

Date: 123, NOV 2016

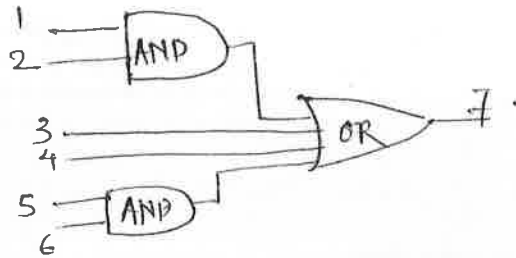
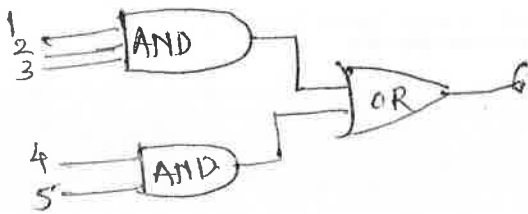
Max. Marks: 60

N.B:-

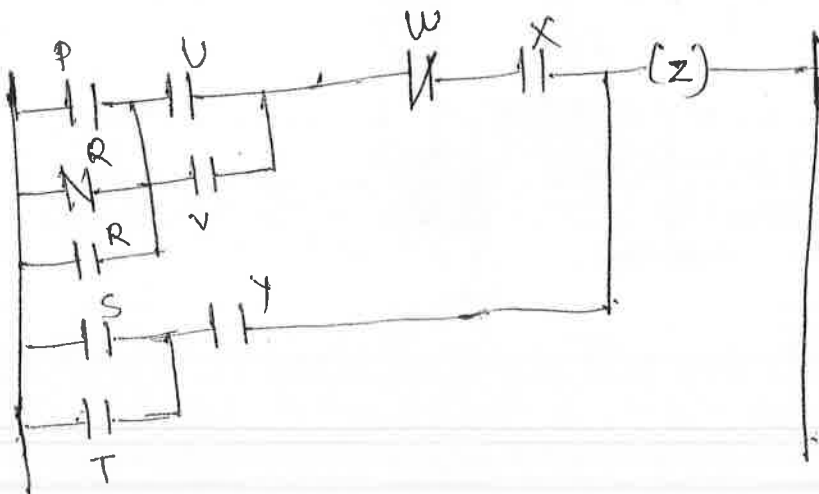
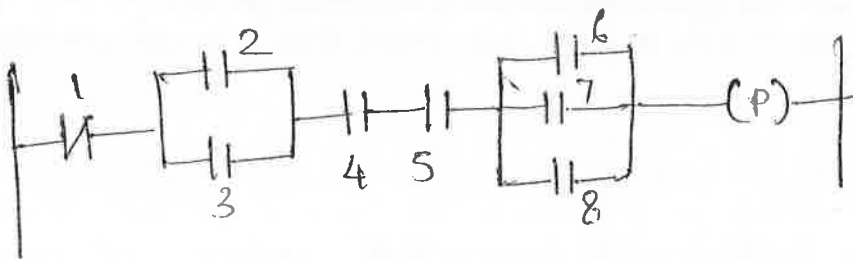
1. All questions are compulsory
2. Figures to the right indicate full marks
3. Assume suitable data if necessary and state it clearly
4. Use of non-programmable calculator is allowed

Q.1 Solve any three

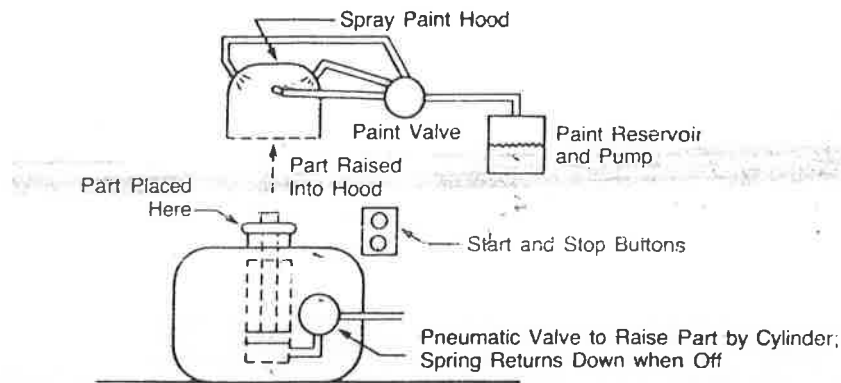
- a. Explain the rationale of cascade control system with an example and explain why it provides better response than a simple feedback. 10
- b. Discuss the steps involved in PLC programming 10
- c. i. Convert following logic gates to ladder diagram 10



ii. Convert Following ladder diagram to logic gates



- d. Explain the automation hierarchy of a computer system. Explain the Batch and continuous process
- e. Develop ladder diagram for the following . A part is to be placed on a mandrel. When the part is in place, the mandrel automatically raises the part into hood. After the part rises and is in hood, it is to have spray paint applied for a period of six seconds. At the end of the six seconds, the mandrel returns to the original position. The painted part is then removed from the mandrel by hand.



Q.2 Solve any three

- a. Explain a direct digital Control system and Supervisory Control system with suitable example. 10
- b. Explain the major types of timer function used in PLC. 10
- c. Discuss and compare the standard interfaces as RS 232C, RS 422A, RS485. 10
- d. Discuss the various final control element used in controlling process. 10
- e. For a tank level control as shown below , draw a block diagram for computer aided control 10

