



C14-EE-606

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BOARD DIPLOMA EXAMINATION, (C-14)

MARCH / APRIL - 2019

DEEE - VI SEMESTER EXAMINATION

INDUSTRIAL AUTOMATION

Time : 3 Hours]

[Total Marks : 80

PART - A

3×10=30

Instructions :

- (1) Answer **ALL** questions.
- (2) Each question carries **THREE** marks.
- (3) Answer should be brief and straight to the point and shall not exceed five simple sentences.

- 1 State the need for Automation.
- 2 Define transfer function and write its formulae.
- 3 Define valve.
- 4 Classify the controllers.
- 5 State the tacho-generator and list types of it.
- 6 Write the rule for moving the summing point ahead of a block.
- 7 State limitations of transfer function in control system.
- 8 Draw the block diagram of a digital control system.
- 9 Draw ladder diagram of an AND gate and an OR gate.
- 10 Write truth table for NAND gate.

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[Contd...

PART - B**10×5=50**

- Instructions :**
- (1) Answer any **FIVE** questions.
 - (2) Each question carries **TEN** marks.
 - (3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11 Explain briefly the concept of open loop and closed loop control of a temperature controller.
- 12 (a) State the requirements of automation.
(b) Explain the concept of PI controller.
- 13 Explain the working of Reed relay with a neat sketch.
- 14 Differentiate between Hydraulic and pneumatic controllers in any eight aspects.
- 15 Explain the working of the synchro as an error detector.
- 16 Determine the transfer function $V_o(S)/V_i(S)$ of the electrical system shown in fig. (1).

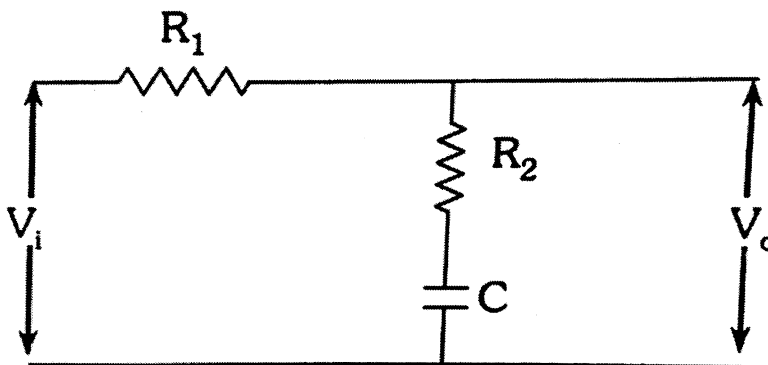


Fig. (1)

- 17 Draw the block diagram of PLC and explain the function of each part.
- 18 Draw the ladder diagram of a DOL starter and explain its operation.