C14–EE–**606**

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BOARD DIPLOMA EXAMINATION, (C–14)
MARCH/APRIL—2018
DEEE—SIXTH 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) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. List any three advantages of automation.

2. State the need for feedback in a control system and list the types of feedback.

3. What is meant by normally open and normally closed contact types?

4. Compare between AC and DC servomotors in any six aspects.

5. What are asynchro and synchro pairs?

6. Define impulse function and write the Laplace transform of impulse function.

7. State the limitations of a transfer function.

8. Define *(a)* time variant control system and *(b)* continuous data control system.

9. State any six applications of PLC.

10. Draw the ladder diagrams for AND and OR gate.

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain open loop and closed loop control systems.

12. *(a)* Define transfer function and derive it.   5

(b) With the help of a block diagram, explain the concept of PID controller.   5

13. Explain the working of an electromagnetic relay.

14. Explain the working of a potentiometer and its use as an error detector.

15. Differentiate between hydraulic and pneumatic controllers.

16. Determine the transfer function $C(S)/R(S)$ for the system shown in the figure :
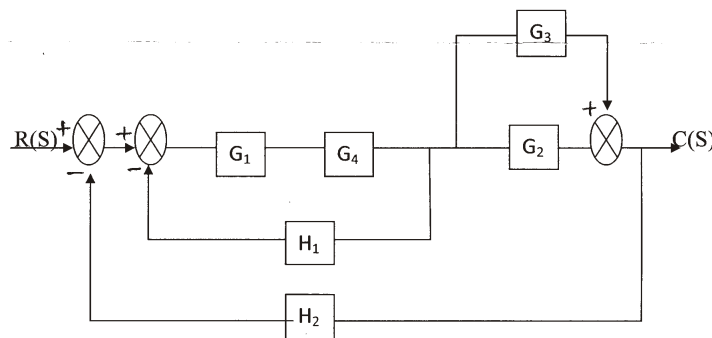
17. Explain the working of a T-OFF timer.

18. Draw and explain ladder diagrams for stair case lighting.

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