

Code: 13A02806

B.Tech IV Year II Semester (R13) Regular & Supplementary Examinations April 2018

INDUSTRIAL AUTOMATION & CONTROL

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

1 Answer the following: (10 X 02 = 20 Marks)

- (a) What is measurement?
- (b) Name any two pressure and force measurement.
- (c) What is overriding control system?
- (d) What is split range controller?
- (e) What is inverse step response?
- (f) State two differences between analog control and sequence control.
- (g) What is an actuator?
- (h) What are hydraulic motors?
- (i) How do stepper motor works?
- (j) What is the difference between a motor and a drive?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Explain the concept of generalized measurement system, with block diagram taking the working of Bourdon pressure gauge as an example.

OR

3 Why are industries turning towards automation? Explain briefly.

UNIT – II

4 With a block diagram, explain series and parallel PID algorithm.

OR

5 Write short notes on:

- (a) Selective control.
- (b) Split range control.

UNIT – III

6 Define a programmable logic controller and name its major structural components.

OR

7 Describe a typical program scan cycle and its impact on control performance.

UNIT – IV

8 With a neat sketch, explain hydraulic circuit for sequencing of two cylinders.

OR

9 Classify hydraulic control valves. Explain with neat sketch working of check valve and give its graphical representation.

UNIT – V

10 Sketch and explain briefly working principle of induction motor.

OR

11 Write short notes on:

- (a) DC converter.
- (b) Servo drives.
