



NBQ-003-0271003 Seat No. _____

M. Sc. (ECI) (Sem. X) (CBCS) Examination

April / May – 2017

Paper - 39 : Industrial Electronics Devices

(New Course)

Faculty Code : 003

Subject Code : 0271003

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Instructions :

- (1) All questions carry **equal** marks.
- (2) Figures on **right** hand side indicate marks.

1 Answer the following : (any seven) 14

- (1) Write a principle motor.
- (2) Write an equation of Back E.M.F. and voltage equation of motor.
- (3) Write a definition of Torque.
- (4) Write a definition of stepper motor.
- (5) Write types of PM stepper motor.
- (6) What is a purpose of non contact position sensor ?
- (7) Which types of -fields are used in capacitive and inductive sensor ?
- (8) Define a sensitivity and resolution.
- (9) Write only name of non contact position sensor.
- (10) List the application of Limit switch.

2 Answer the following : (any two) 14

- (1) Explain a comparison of Generator and Motor action. 7
- (2) Write a note on shaft torque. 7
- (3) Explain a significance of Back E.M.F. 7

3	Answer the following :	14
(1)	Write a note on Torque with its equation.	5
(2)	Explain variable reluctance stepper motor.	5
(3)	Explain 1.8 degree rotation hybrid- stepper motor.	4
OR		
3	Answer the following :	14
(1)	Write about operation of PMH stepper motor.	7
(2)	Write a note on Inductive sensor.	7
4	Answer the following :	14
(1)	Write a comparison between capacitive and inductive sensor.	7
(2)	Write a note on Hall Effect sensor.	7
5	Answer the following : (any two)	14
(1)	Write a note on selecting and specifying capacitive and Inductive sensor.	7
(2)	Write a note on Ultrasonic position sensor.	7
(3)	Write a note on Bifilar wound hybrid stepper motor.	7
(4)	Write a note on photoelectric sensor.	7