



HCN-003-027903

Seat No. _____

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

October – 2017

Paper - 35 : Basic Programmable Controllers

Faculty Code : 003

Subject Code : 027903

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

[Total Marks : 70

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

- 1 Answer the following : (Any Seven) 14
- (1) Draw a symbol of Momentary and Maintained pushbutton.
 - (2) Write full form of MTW and THHN.
 - (3) Give a meaning of following reference designators :
L, F, CB, OL
 - (4) What is the meaning of STOP and JOG in machine control terminology ?
 - (5) Draw a PLC ladder diagram for following Boolean expression :
 $OUT1=(IN1+IN2). (IN3+IN4)$
 - (6) Draw a ladder diagram of Always De-energized Coil and Always energized Coil.
 - (7) Write a definition of Timers and Counters.
 - (8) Draw a ladder diagram of D flip flop.
 - (9) What is the meaning of Retentive and Non Retentive timer ?
 - (10) Draw an ASCII diagram of AND-OR rung.

2	Answer the following : (Any Two)	14
	(1) Explain a typical system components for a modularized PLC.	7
	(2) Write a note on Time Delay Relay with its timing diagram.	7
	(3) Write a note on Latch circuit.	7
3	Answer the following :	14
	(1) Draw a wiring diagram of AND, OR, AND-OR, OR-AND.	5
	(2) Write a note on one shot.	5
	(3) Write a Mnemonic Programming Code for AND-OR logic.	4
OR		
3	Answer the following :	14
	(1) Write a note on Isolated Inputs and Non-Isolated Input Wiring.	7
	(2) Write a note on Inductive Proximity Sensors.	7
4	Answer the following :	14
	(1) Write a note on R S flip flop.	7
	(2) Write a note on Sequencers.	7
5	Answer the following : (Any Two)	14
	(1) Write a note on majority circuit.	7
	(2) Write a note on number of Bits of Resolution.	7
	(3) Write a note on Single cycle circuit with PLC ladder.	7
	(4) Write a note on Ultrasonic Proximity Sensors.	7