Kandula Srinivasa Reddy Memorial College of Engineering (Autonomous)

Kadapa-516003. AP

(Approved by AICTE, Affiliated to JNTUA, Ananthapuramu, Accredited by NAAC)

(An ISO 9001-2008 Certified Institution)

Department of Electronics and Communication Engineering

Certification Course

On

"Industrial Automation with PLC"

Resource Person : Sri. M Kuldeep Reddy

Course Coordinator: Sri.P Krishna Teja

Duration : 27-09-2021 to 14-10-2021

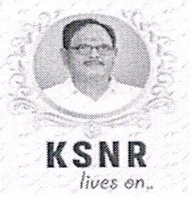
K.S.R.M. COLLEGE OF ENGINEERING

(UGC - AUTONOMOUS)

Kadapa, Andhra Pradesh, India - 516003

Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu.

An ISO 14001:2004 & 9001: 2015 Certified Institution



Lr./KSRMCE/ (Department of ECE)/2020-21

Date: 23-09-2021

To
The Principal
KSRM College of Engineering
Kadapa, AP.

Sub: KSRMCE - (Department of ECE) – Permission to conduct a certification course on "Industrial Automation with PLC" –Request– reg.

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Respected Sir,

With reference to the cited, the Department of ECE is planning to conduct a certification course on "Industrial Automation with PLC"for All B.Tech V SEM students from 27-09-2021 to 14-10-2021. In this regard, we kindly request you to grant us permission to conduct a certification course. This is submitted for your kind perusal.

Thanking you sir,

Yours Faithfully,

Coordinator

Sri P.Krishna Teja

Forwarded to the Principal Sir

Cc:

To The Director for Information

To All Deans/HODs

Permitted
V. S. S. Murty
PRINCIPAL
K.S.R.M. COLLEGE OF ENGINEERING
KADAPA-516005, (A.P.)

K.S.R.M. COLLEGE OF ENGINEERING

(UGC - AUTONOMOUS)

Kadapa, Andhra Pradesh, India - 516003

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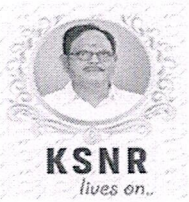


Date: 23-09-2021

Circular

All the B.Tech V SEM students are hereby informed that the department of ECE is going to conduct certification course on "Industrial Automation with PLC" from 27-09-2021 to 14-10-2021. Interested students may register their names with respective faculty member on or before 26-09-2021.

For any queries contact,

Coordinator

Sri P. Krishna Teja, Assistant Professor, ECE Dept.,

HOD

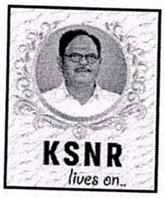
Professor & H.O.D.
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003

Cc to:

The Management /Director / All Deans / All HODS/Staff / Students for information

The IQAC Cell for Documentation

K.S.R.M. COLLEGE OF ENGINEERING



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Department of Electronics & Communication Engineering
Certificate Course on Industrial Automation with PLC
Registration Form

S.No.	Roll.No.	Name of the Student	Branch	Sem	Signature
1	199Y1A0442	G. NAVYA	ECE	V	G. Navya
2	199Y1A0443	G. Siva Kumar	ECE	V	G. Siva Kumar
3	199Y1A0444	G. Swarnalatha	ECE	V	G. Swarnalatha
4	199Y1A0446	G. Sai pravAllika	ECE	V	G. sai pravallika
5	199Y1A0447	G. Kaveetha	ECE	V	G. Kaveetha
6	199Y1A0450	G. yeswath	ECE	V	G. Yeswanth
7	199Y1A0453	G.L. SAI SUMANTH	ECE	V	G. L Saisumanth
8	199Y1 A0454	S. Mohammed saif	ECE	V	Mohammed
9	199Y1A0455	J. Anjali	ECE	V	Anjali
10	199Y1A0464	K. Manoj Kumar	ECE	V	Manoj Kumar
11	199Y1A0467	K. Janardhan	ECE	V	K. Jan
12	199Y1A0469	K. Prasanthi	ECE	V	K. Prasad
13	199Y1A0474	K. Sumithra	ECE	V	K. Sumithra
14	199Y1A0475	K. Neha	ECE	V	Neha
15	199Y1A0476	K. Chandra sekhar Reddy	ECE	V	K. Chandra
16	199Y1A0481	K.B. Yerri Swamy	ECE	V	K.B. Yerriswamy
17	199Y1A0482	K. ANJI	ECE	V	K. Anji
18	199Y1A0490	M. Prakash Reddy	ECE	V	M.P Reddy
19	199Y1A0493	M. Sudharani	ECE	V	M. Sudarani
20	199Y1A04A0	M. PAVANI	ECE	V	M. Pavani
21	199Y1A04A5	M. Pranitha	ECE	V	M. Pranitha
22	199Y1A04A6	M. SRavanthi	ECE	V	M. Sravanthi
23	199Y1A04A9	N. Poornima	ECE	V	N. Poornima

24	199Y1A04B0	N. Jyothika	ECE	IV	N. Jyothika
25	199Y1A04B1	N. Maneesha	ECE	IV	N. Maneesha
26	199Y1A04C0	P. Lingeswari	ECE	IV	P. Lingeswari
27	199Y1A04C1	P. Sai prajwal	ECE	IV	P. Sai prajwal
28	199Y1A04C4	P. S. Koushik	ECE	IV	P. S. Koushik
29	199Y1A04D0	S. K. Sivacharan Reddy	ECE	IV	S. K. Sivacharan Reddy
30	199Y1A04D2	Sai Krishna Kotakonda	ECE	IV	Sai Krishna.
31	199Y1A04D3	S. Charitha	ECE	IV	S. Charitha
32	199Y1A04D9	S. Javeed	ECE	IV	S. Javeed
33	199Y1A04E3	S. Mohammed Ghouse	ECE	IV	S. Ghouse
34	199Y1A04E6	Shaik MUSAB Ahamed	ECE	IV	MUSAB.
35	199Y1A04E8	S. Sadak ali	ECE	IV	S. Sadak ali
36	199Y1A04E9	S. Yunoosh Hussain	ECE	IV	S. Y. Hussain
37	199Y1A04F1	S. Saneer Ahammed	ECE	IV	SS Ahmed
38	199Y1A04G1	T. Ramanjaneyulu	ECE	IV	T. Ramanjaneyulu
39	199Y1A04H5	V. Venkata Ramana Reddy	ECE	IV	V. V. R. R.
40	199Y1A04I8	Y. Tharun kumar reddy	ECE	IV	Y. T. K. Reddy
41	199Y1A04J9	E. Neelavathi	ECE	IV	E. Neelavathi
42	209Y5A0406	G. Nishmaja pravallika	ECE	IV	G. N. pravallika
43	209Y5A0407	K. Manjunatha	ECE	IV	K. Manjunatha
44	209Y5A0408	K. Mohan vamsi	ECE	IV	K. Mohanvamsi
45	209Y5A0410	L. NIHARIKA	ECE	IV	L. Niharika
46	209Y5A0412	M. Venkata Ramana	ECE	IV	M. Venkata
47	209Y5A0414	M. Reddy Sekhar naidu	ECE	IV	Reddy Sekhar naidu
48	209Y5A0415	P. Narasimha Reddy	ECE	IV	Narasimhareddy
49	209Y5A0417	Palleti Subash Reddy	ECE	IV	Palleti
50	209Y5A0418	S. BALA Siddartha	ECE	IV	S. B. Siddartha
51	209Y5A0419	T. Manasa	ECE	IV	T. Manasa

Coordinator(s)

HOD

Professor & H.O.D.
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003.

K.S.R.M. COLLEGE OF ENGINEERING

(UGC-AUTONOMOUS)

Kadapa, Andhra Pradesh, India– 516 005

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Industrial Automation with PLC

Module 1:

Introduction to Automation, History of Automation, Introduction to PLC, Advantages and disadvantages of PLC, PLC programming languages, Ladder logic intro, Introduction to NO and NC coils/switches, Rules for Ladder Logic Programming, Intro to WPL Software, Download and Installation procedure, Applications based on NO and NC, Introduction to Latching.

(3 Hrs)

Applications based on the latching concept, Interlinking and applications on it, Introduction to memory coils, Applications on memory coils.

(3Hrs)

Module 2:

Introduction to Timers, Types of timers and working, Applications based on timers concept, Introduction to Counters, Types of counters and working, Applications based on counters concept. Two-Way Traffic Light Application based on all concepts.

(6 Hrs)

Module 3:

Introduction to PLC Hardware, DELTA PLC hardware specifications, Source and Sink Concept, Introduction to the wiring of PLC, Interfacing the I/O devices to PLC, Applications on NO NC concepts, Introduction to the Push Buttons. **(6 Hrs)**

Module 4:

Applications based on push buttons, Applications based on memory coils, Introduction about the relay, Relay construction and working, Interfacing the relay to the PLC, Applications using the relay.**(5 Hrs)**

Introduction to the contactor, DOL Starter application using contactor, Interfacing the contactor to PLC, Introduction to the sensors, About Inductive and Capacitive proximity sensors, Interfacing the sensors to the PLC, Applications based on the sensors. **(4 Hrs)**

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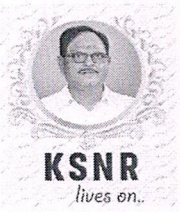

Department of Electronics & Communication Engineering

Certificate Course on "Industrial Automation with PLC"

Schedule

S.No	Date	Time	Faculty	Topic
1	28-09-2021	9AM to 10AM	Kuldeep Reddy Mure	Introduction to Automation, History of Automation, Introduction to PLC.
2	28-09-2021	10Am to 11AM	Kuldeep Reddy Mure	Advantages and disadvantages of PLC, PLC programming languages.
3	28-09-2021	11AM to 12PM	Kuldeep Reddy Mure	Ladder logic intro, Introduction to NO and NC coils/switches.
4	29-09-2021	9AM to 10AM	Kuldeep Reddy Mure	Rules for Ladder Logic Programming, Intro to WPL Software.
5	29-09-2021	10Am to 11AM	Kuldeep Reddy Mure	Download and Installation procedure, Applications based on NO and NC.
6	29-09-2021	11AM to 12PM	Kuldeep Reddy Mure	Introduction to Latching.
7	30-09-2021	9AM to 10AM	Kuldeep Reddy Mure	Introduction to Timers.
8	30-09-2021	10Am to 11AM	Kuldeep Reddy Mure	Types of timers and working.
9	30-09-2021	11AM to 12PM	Kuldeep Reddy Mure	Applications based on timers concept, Introduction to Counters.
10	01-10-2021	9AM to 10AM	Kuldeep Reddy Mure	Types of counters and working.
11	01-10-2021	10Am to 11AM	Kuldeep Reddy Mure	Applications based on counters concept.
12	01-10-2021	11AM to 12PM	Kuldeep Reddy Mure	Two-Way Traffic Light Application based on all concepts.
13	02-10-2021	9AM to 10AM	Kuldeep Reddy Mure	Introduction to PLC Hardware.

14	02-10-2021	10Am to 11AM	Kuldeep Reddy Mure	DELTA PLC hardware specifications.
15	02-10-2021	11AM to 12PM	Kuldeep Reddy Mure	Source and Sink Concept, Introduction to the wiring of PLC.
16	04-10-2021	9AM to 10AM	Kuldeep Reddy Mure	Interfacing the I/O devices PLC.
17	04-10-2021	10Am to 11AM	Kuldeep Reddy Mure	Applications on NO NC concepts.
18	04-10-2021	11AM to 12PM	Kuldeep Reddy Mure	Introduction to the Push Buttons.
19	05-10-2021	9AM to 10AM	Kuldeep Reddy Mure	Applications based on push buttons.
20	05-10-2021	10Am to 11AM	Kuldeep Reddy Mure	Applications based on memory coils.
21	05-10-2021	11AM to 12PM	Kuldeep Reddy Mure	Introduction about the relay.
22	06-10-2021	9AM to 10AM	Kuldeep Reddy Mure	Relay construction and working.
23	06-10-2021	10Am to 11AM	Kuldeep Reddy Mure	Interfacing the relay to the PLC.
24	06-10-2021	11AM to 12PM	Kuldeep Reddy Mure	Applications using the relay.
25	07-10-2021	9AM to 10AM	Kuldeep Reddy Mure	Practical Session.
26	07-10-2021	10Am to 11AM	Kuldeep Reddy Mure	Introduction to the contactor, DOL Starter application using contactor.
27	07-10-2021	11AM to 12PM	Kuldeep Reddy Mure	Interfacing the contactor to PLC, Introduction to the sensors.
28	08-10-2021	9AM to 10AM	Kuldeep Reddy Mure	About Inductive and Capacitive proximity sensors.
29	08-10-2021	10Am to 11AM	Kuldeep Reddy Mure	Interfacing the sensors to the PLC.
30	08-10-2021	11AM to 12PM	Kuldeep Reddy Mure	Applications based on the sensors.
31	11-10-2021	9AM to 10AM	Kuldeep Reddy Mure	Practical Session.
32	11-10-2021	10Am to 11AM	Kuldeep Reddy Mure	Introduction to the Push Buttons.
33	11-10-2021	11AM to 12PM	Kuldeep Reddy Mure	Applications based on push buttons.
34	12-10-2021	9AM to 10AM	Kuldeep Reddy Mure	Applications based on memory coils.

35	12-10-2021	10Am to 11AM	Kuldeep Reddy Mure	Introduction about the relay.
36	12-10-2021	11AM to 12PM	Kuldeep Reddy Mure	Relay construction and working.
37	13-10-2021	9AM to 10AM	Kuldeep Reddy Mure	Interfacing the relay to the PLC.
38	13-10-2021	10Am to 11AM	Kuldeep Reddy Mure	Applications using the relay.
39	13-10-2021	11AM to 12PM	Kuldeep Reddy Mure	Practical Session.
40	14-10-2021	9AM to 10AM	Kuldeep Reddy Mure	Introduction to the contactor, DOL Starter application using contactor.
41	14-10-2021	10Am to 11AM	Kuldeep Reddy Mure	Interfacing the contactor to PLC, Introduction to the sensors.
42	14-10-2021	11AM to 12PM	Kuldeep Reddy Mure	Certification distribution

Coordinators

HOD

Professor & H.O.D.
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003.

CERTIFICATION COURSE ON "INDUSTRIAL AUTOMATION WITH PLC

ATTENDANCE REPORT

ROLL NO.	10/7/2021			10/8/2021			10/9/2021			10/11/2021			10/12/2021			10/13/2021			10/14/2021		
	P1	P2	P3	P1	P2	P3	P1	P2	P3	P1	P2	P3	P1	P2	P3	P1	P2	P3	P1	P2	P3
199Y1A0442	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0443	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0444	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0446	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0447	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	A	A	A
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199Y1A0493	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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199Y1A04C4	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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199Y1A04D2	A	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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199Y1A04D9	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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199Y1A04E6	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04E8	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04F1	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04G1	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04H5	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04I8	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
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209Y5A0415	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0417	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0418	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0419	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P

CERTIFICATION COURSE ON "INDUSTRIAL AUTOMATION WITH PLC"

ATTENDANCE REPORT

	9/28/2021			9/29/2021			9/30/2021			10/1/2021			10/2/2021			10/4/2021			10/5/2021			10/6/2021		
ROLL NO.	P1	P2	P3	P1	P2	P3	P1	P2	P3	P1	P2	P3	P1	P2	P3	P1	P2	P3	P1	P2	P3	P1	P2	P3
199Y1A0442	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0443	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0444	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0446	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0447	P	P	P	P	P	P	A	A	A	A	A	A	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0450	P	P	P	P	P	P	P	P	P	A	A	A	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0453	P	P	P	P	P	P	A	A	A	A	A	A	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0455	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0464	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0467	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0469	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0474	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0475	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0476	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0480	P	P	P	P	P	P	A	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0482	P	P	P	P	P	P	A	A	A	A	A	A	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0490	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A0493	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04A0	P	P	P	P	P	P	A	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04A5	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04A6	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04A9	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04B0	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04B1	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04C0	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04C2	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04C4	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04D0	P	P	P	P	P	P	A	A	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04D2	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04D3	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04D9	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04E3	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04E6	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04E8	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04F1	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04G1	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04H5	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
199Y1A04I8	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0402	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0406	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0407	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0408	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0409	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0410	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0412	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0414	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0415	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0417	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0418	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
209Y5A0419																								

Professor & H.O.D.
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003

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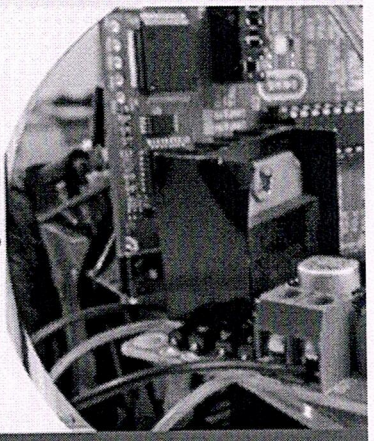
Department of ECE

Certification Course on "Industrial Automation with PLC"



Skill AP
APSSDC

Venue

CRI LAB

27-09-2021 to
14-10-2021

Cordinators

Sri.P.KrishnaTeja Yadav
Asst.Professor, Dept of ECE

Resource Persons

Sri.Kuldeep Reddy Mure
APSSDC TRAINER

Dr. G. Hemalatha	Dr. V.S.S. Murthy	Dr. Kandula Chandra Obul Reddy	Smt. K. Rajeswari	Sri K. Madan Mohan Reddy	Sri K. Raja Mohan Reddy
H.O.D	Principal	Managing Director	Correspondent Secretary, Tresurer	Vice-Chairman	Chairman

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ACTIVITY REPORT

Certificate Course

On

"*Industrial Automation with PLC*"

27th Sep to 14th Oct, 2021

Target Group	:	Students
Details of Participants	:	51 Students
Co-coordinator(s)	:	P.Krishnateja Yadav, Asst.Prof, ECE-Dept
Organizing Department	:	Electronics and Communication Engineering & CRI
Venue	:	CRI Lab

Description :

The main objective of this WORKSHOP is to make the aspiring engineers acquainted with the conceptual as well as practical knowledge of the Industrial Automation & latest technologies being used to achieve industrial automation. The idea of organizing this workshop is to inculcate the basic fundamentals of automation in the students and provide them with a platform to work on, In The Near Future.

The Most Used Guiding Force Behind An Automated Industrial Plant Is A "Programmable Logic Controller" Generally Known As A PLC. PLCs Along With Certain Other Necessary Ingredients Like Sensors, Motors, Actuators, Valves, Conveyors, Boilers, SCADA Systems, Computers & Many More, Makes A Real Automated Manufacturing Plant.

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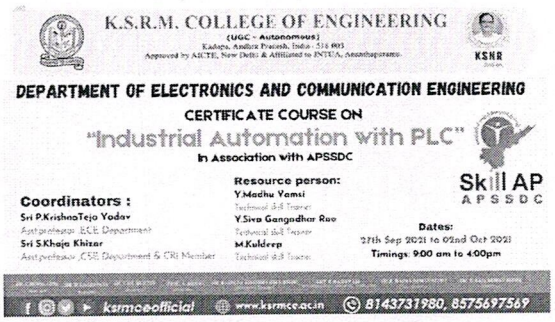
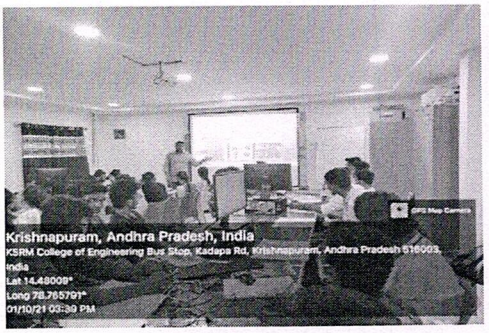
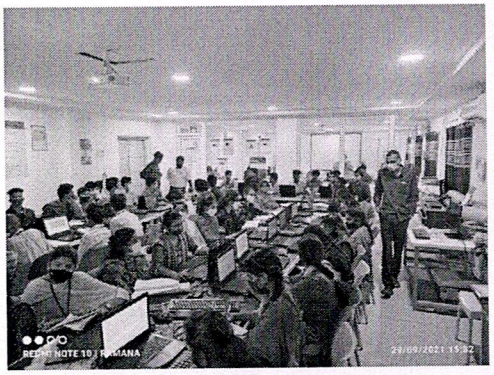
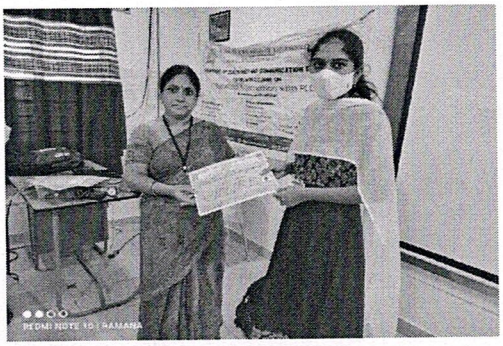
Photo :









Co-ordinator

HOD

Professor & H.O.D.
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003

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Kadapa, Andhra Pradesh, India - 516003
Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu.

Certificate of Participation

This is to certify that

Mr/Ms K .ANJI with Roll.No. 199Y1A0482

has attended the Certification course on " Industrial Automation with PLC" from 27-09-21 to 14-10-21 organized by Dept. of Electronics and Communication Engineering

G. H

Dr. G. Hemalatha
HOD, ECE

V. S. S. Murthy

Prof V S S Murthy
Principal

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Certificate of Participation

This is to certify that

Mr/Ms T.MANASA with Roll.No. 209Y5A0419

has attended the Certification course on " Industrial Automation with PLC" from 27-09-21 to 14-10-21 organized by Dept. of Electronics and Communication Engineering

Dr. G. Hemalatha
HOD, ECE

Prof V S S Murthy
Principal

Feedback form on Certificate Course

Industrial Automation With PLC (27-09-2021 to 14-10-2021)

* Required

1. Roll Number *

_____

2. Name of the Student *

_____

3. B.Tech Semester *

Mark only one oval.

- ◯ I SEM
- ◯ II SEM
- ◯ III SEM
- ◯ IV SEM
- ◯ V SEM
- ◯ VI SEM
- ◯ VII SEM
- ◯ VIII SEM

4. Branch *

Mark only one oval.

- Civil Enginerring
- EEE
- ME
- ECE
- CSE
- AI&ML

5. Email ID *

_____

6. Is the course content meet your exceptation. *

Mark only one oval.

- Yes
- No

7. Is the lecture sequence well planned. *

Mark only one oval.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

8. The contents of the course is explained with examples. *

Mark only one oval.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

9. Is the level of course high. *

Mark only one oval.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

10. Is the course exposed you to the new knowledge and practice. *

Mark only one oval.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

11. Is the lecture clear and easy to understand. *

Mark only one oval.

- ◯ Strongly disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly agree

12. Rate the value of the course increasing your skills. *

Mark only one oval.

- ◯ Strongly disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

13. Any suggestions

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Department of Electronics and Communication Engineering

Feedback Form

S.No.	Email Id	Name of the student	Year	Branch	Roll Num	Is the course content met your expectation	Is the lecture sequence well planned	The contents of the course is explained with examples	Is the level of course high	Is the course exposed you to the new knowledge and practices	Is the lecturer clear and easy to understand	Rate the value of course in increasing your skills	Any issues
1	199Y1A0442@ksrmce.ac.in	G.NAVYA	B.Tech III year	ECE	199Y1A0442	Yes	Yes	Agree	Agree	Strongly agree	4	5	Nothing
2	199Y1A0443@ksrmce.ac.in	G. SIVA KUMAR	B.Tech III year	ECE	199Y1A0443	Yes	Yes	Agree	Agree	Strongly agree	5	5	Nothing
3	199Y1A0444@ksrmce.ac.in	G.SWARNALATHA	B.Tech III year	ECE	199Y1A0444	Yes	Yes	Agree	Agree	Strongly agree	4	5	Good
4	199Y1A0446@ksrmce.ac.in	G.SAI PRAVALLIKA	B.Tech III year	ECE	199Y1A0446	Yes	Yes	Agree	Agree	Strongly agree	5	5	nothing
5	199Y1A0447@ksrmce.ac.in	G.KAVEETHA	B.Tech III year	ECE	199Y1A0447	Yes	Yes	Agree	Agree	Strongly agree	5	5	Good
6	199Y1A0450@ksrmce.ac.in	G.YESWANTH	B.Tech III year	ECE	199Y1A0450	Yes	Yes	Agree	Agree	Strongly agree	4	5	very good
7	199Y1A0453@ksrmce.ac.in	G.L. SAI SUMANTH	B.Tech III year	ECE	199Y1A0453	Yes	Yes	Strongly agree	Agree	Strongly agree	4	3	Nothing
8	199Y1A0454@ksrmce.ac.in	S. MOHAMMED SAIF	B.Tech III year	ECE	199Y1A0455	Yes	Yes	agree	Agree	Strongly agree	4	4	no
9	199Y1A0455@ksrmce.ac.in	J.ANJALI	B.Tech III year	ECE	199Y1A0464	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Nothing
10	199Y1A0464@ksrmce.ac.in	K. MANOJ KUMAR	B.Tech III year	ECE	199Y1A0467	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Good

11	199Y1A0467@ksrmce.ac.in	K. JANARDHAN	B.Tech III year	ECE	199Y1A0469	Yes	Yes	Agree	Agree	Strongly agree	5	4	Good
12	199Y1A0469@ksrmce.ac.in	K. PRASANTHI	B.Tech III year	ECE	199Y1A0474	Yes	Yes	agree	Agree	Strongly agree	5	5	Good
13	199Y1A0474@ksrmce.ac.in	K.SUMITHRA	B.Tech III year	ECE	199Y1A0475	Yes	Yes	agree	Agree	Strongly agree	3	5	Good
14	199Y1A0475@ksrmce.ac.in	K.NEHA	B.Tech III year	ECE	199Y1A0476	Yes	Yes	agree	Agree	Strongly agree	5	4	very good
15	199Y1A0476@ksrmce.ac.in	K. CHANDRA SEKHAR REDDY	B.Tech III year	ECE	199Y1A0480	Yes	Yes	agree	Agree	Strongly agree	4	4	very good
16	199Y1A0481@ksrmce.ac.in	K.B. YERRISWAMY	B.Tech III year	ECE	199Y1A0482	Yes	Yes	agree	Agree	Strongly agree	5	4	very good
17	199Y1A0482@ksrmce.ac.in	K. ANJI	B.Tech III year	ECE	199Y1A0490	Yes	Yes	agree	Agree	Strongly agree	3	5	no
18	199Y1A0490@ksrmce.ac.in	M. PRAKASH REDDY	B.Tech III year	ECE	199Y1A0493	Yes	Yes	agree	Agree	Strongly agree	4	5	nithing
19	199Y1A0493@ksrmce.ac.in	M.SUDHARANI	B.Tech III year	ECE	199Y1A04A0	Yes	Yes	Strongly agree	Agree	Strongly agree	4	5	Good
20	199Y1A04A0@ksrmce.ac.in	M.PAVANI	B.Tech III year	ECE	199Y1A04A5	Yes	Yes	Strongly agree	Agree	Strongly agree	4	4	Good
21	199Y1A04A5@ksrmce.ac.in	M.PRANITHA	B.Tech III year	ECE	199Y1A04A6	Yes	Yes	Strongly agree	Agree	Strongly agree	4	3	Good
22	199Y1A04A6@ksrmce.ac.in	M.SRAVANTHI	B.Tech III year	ECE	199Y1A04A9	Yes	Yes	agree	Agree	Strongly agree	4	4	Good
23	199Y1A04A9@ksrmce.ac.in	N.POORNIMA	B.Tech III year	ECE	199Y1A04B0	Yes	Yes	agree	Agree	Strongly agree	5	4	Good
24	199Y1A04B0@ksrmce.ac.in	N.JYOTHIKA	B.Tech III year	ECE	199Y1A04B1	Yes	Yes	Strongly agree	Agree	Strongly agree	5	4	Good
25	199Y1A04B1@ksrmce.ac.in	N.MANEESHA	B.Tech III year	ECE	199Y1A04C0	Yes	Yes	agree	Agree	Strongly agree	5	5	Good
26	199Y1A04C0@ksrmce.ac.in	P. LINGESWARI	B.Tech III year	ECE	199Y1A04C2	Yes	Yes	agree	Agree	Strongly agree	5	5	Nothing
27	199Y1A04C2@ksrmce.ac.in	P. SAI PRAJWAL	B.Tech III year	ECE	199Y1A04C4	Yes	Yes	agree	Agree	Strongly agree	5	5	no
28	199Y1A04C4@ksrmce.ac.in	P.S. KOUSHIK	B.Tech III year	ECE	199Y1A04D0	Yes	Yes	agree	Agree	Strongly agree	3	4	no

29	199Y1A04D0@ksrmce.ac.in	S.K. SIVA CHARAN REDDY	B.Tech III year	ECE	199Y1A04D2	Yes	Yes	Strongly agree	Agree	Strongly agree	3	4	no
30	199Y1A04D2@ksrmce.ac.in	SAI KRISHNA KONAKONDLA	B.Tech III year	ECE	199Y1A04D3	Yes	Yes	Strongly agree	Agree	Strongly agree	4	5	Nothing
31	199Y1A04D3@ksrmce.ac.in	S. CHARITHA	B.Tech III year	ECE	199Y1A04D9	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Nothing
32	199Y1A04D9@ksrmce.ac.in	S. JAVEED	B.Tech III year	ECE	199Y1A04E3	Yes	Yes	Strongly agree	Agree	Strongly agree	4	5	Good
33	199Y1A04E3@ksrmce.ac.in	S. MOHAMMED GHOUSE	B.Tech III year	ECE	199Y1A04E6	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	nothing
34	199Y1A04E6@ksrmce.ac.in	SHAIK MUSAB AHAMED	B.Tech III year	ECE	199Y1A04E8	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Good
35	199Y1A04E8@ksrmce.ac.in	S. SADAK ALI	B.Tech III year	ECE	199Y1A04F1	Yes	Yes	Strongly agree	Agree	Strongly agree	4	5	very good
36	199Y1A04E9@ksrmce.ac.in	S.YUNOOSH HUSSAIN	B.Tech III year	ECE	199Y1A04G1	Yes	Yes	Strongly agree	Agree	Strongly agree	4	3	Nothing
37	199Y1A04F1@ksrmce.ac.in	S SAMEER AHAMMED	B.Tech III year	ECE	199Y1A04H5	Yes	Yes	Strongly agree	Agree	Strongly agree	4	4	no
38	199Y1A04G1@ksrmce.ac.in	T. RAMANJANEYULU	B.Tech III year	ECE	199Y1A04I8	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Nothing
39	199Y1A04H5@ksrmce.ac.in	V.VENKATA RAMANA REDDY	B.Tech III year	ECE	209Y5A0402	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Good
40	199Y1A04I8@ksrmce.ac.in	Y. THARUN KUMAR REDDY	B.Tech III year	ECE	209Y5A0406	Yes	Yes	Strongly agree	Agree	Strongly agree	5	4	Good
41	209Y5A0402@ksrmce.ac.in	E. NEELAVATHI	B.Tech III year	ECE	209Y5A0407	Yes	Yes	Strongly agree	Agree	Strongly agree	5	5	Good
42	209Y5A0406@ksrmce.ac.in	G.NISHMAJA PRAVALLIKA	B.Tech III year	ECE	209Y5A0408	Yes	Yes	Strongly agree	Agree	Strongly agree	3	5	Good
43	209Y5A0407@ksrmce.ac.in	K. MANJUNATHA	B.Tech III year	ECE	209Y5A0409	Yes	Yes	Strongly agree	Agree	Strongly agree	5	4	very good
44	209Y5A0408@ksrmce.ac.in	K. MOHAN VAMSI	B.Tech III year	ECE	209Y5A0410	Yes	Yes	Strongly agree	Agree	Strongly agree	4	4	very good
45	209Y5A0410@ksrmce.ac.in	L. NIHARIKA	B.Tech III year	ECE	209Y5A0412	Yes	Yes	Strongly agree	Agree	Strongly agree	5	4	very good
46	209Y5A0412@ksrmce.ac.in	M.VENKATA RAMANA	B.Tech III year	ECE	209Y5A0414	Yes	Yes	Strongly agree	Agree	Strongly agree	3	5	no

47	209Y5A0414@ksrmce.ac.in	M.REDDU SEKHAR NAIDU	B.Tech III year	ECE	209Y5A0415	Yes	Yes	Strongly agree	Agree	Strongly agree	4	5	nithing
48	209Y5A0415@ksrmce.ac.in	N. NARASIMHA RDDY	B.Tech III year	ECE	209Y5A0417	Yes	Yes	Strongly agree	Agree	Strongly agree	4	5	Good
49	209Y5A0417@ksrmce.ac.in	PALLETI SUBHASH REDDY	B.Tech III year	ECE	209Y5A0418	Yes	Yes	Strongly agree	Agree	Strongly agree	4	4	Good
50	209Y5A0418@ksrmce.ac.in	S. BALA SIDDARTHA	B.Tech III year	ECE	209Y5A0419	Yes	Yes	Strongly agree	Agree	Strongly agree	4	3	Good
51	209Y5A0419@ksrmce.ac.in	T.MANASA	B.Tech III year	ECE	199Y1A0419	Yes	Yes	Strongly agree	Agree	Strongly agree	4	4	Good

Coordinator

HOD

Professor & H.O.D.
Department of E.C.E.
K.S.R.M. College of Engineering
KADAPA - 516 003

PRINCIPAL

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA-516003
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
VALUE ADDED/CERTIFICATE COURSE ON
INDUSTRIAL AUTOMATION WITH PLC FROM 27/09/2021 TO 14/10/2021
AWARD LIST

S.No	Roll Number	Name of the Student	Marks Obtained
1.	199Y1A0442	G.NAVYA	11
2.	199Y1A0443	G. SIVA KUMAR	12
3.	199Y1A0444	G.SWARNALATHA	15
4.	199Y1A0446	G.SAI PRAVALLIKA	16
5.	199Y1A0447	G.KAVEETHA	13
6.	199Y1A0450	G.YESWANTH	14
7.	199Y1A0453	G.L. SAI SUMANTH	14
8.	199Y1A0454	S. MOHAMMED SAIF	16
9.	199Y1A0455	J.ANJALI	12
10.	199Y1A0464	K. MANOJ KUMAR	12
11.	199Y1A0467	K. JANARDHAN	12
12.	199Y1A0469	K. PRASANTHI	13
13.	199Y1A0474	K.SUMITHRA	08
14.	199Y1A0475	K.NEHA	13
15.	199Y1A0476	K. CHANDRA SEKHAR REDDY	15
16.	199Y1A0481	K.B. YERRISWAMY	15
17.	199Y1A0482	K. ANJI	16
18.	199Y1A0490	M. PRAKASH REDDY	13
19.	199Y1A0493	M.SUDHARANI	12
20.	199Y1A04A0	M.PAVANI	09

21.	199Y1A04A5	M.PRANITHA	13
22.	199Y1A04A6	M.SRAVANTHI	12
23.	199Y1A04A9	N.POORNIMA	11
24.	199Y1A04B0	N.JYOTHIKA	14
25.	199Y1A04B1	N.MANEESHA	16
26.	199Y1A04C0	P. LINGESWARI	16
27.	199Y1A04C2	P. SAI PRAJWAL	15
28.	199Y1A04C4	P.S. KOUSHIK	13
29.	199Y1A04D0	S.K. SIVA CHARAN REDDY	10
30.	199Y1A04D2	SAI KRISHNA KONAKONDLA	12
31.	199Y1A04D3	S. CHARITHA	14
32.	199Y1A04D9	S. JAVEED	12
33.	199Y1A04E3	S. MOHAMMED GHOUSE	14
34.	199Y1A04E6	SHAIK MUSAB AHAMED	15
35.	199Y1A04E8	S. SADAK ALI	16
36.	199Y1A04E9	S.YUNOOSH HUSSAIN	10
37.	199Y1A04F1	S SAMEER AHAMMED	08
38.	199Y1A04G1	T. RAMANJANEYULU	14
39.	199Y1A04H5	V.VENKATA RAMANA REDDY	13
40.	199Y1A04I8	Y. THARUN KUMAR REDDY	15
41.	209Y5A0402	E. NEELAVATHI	18
42.	209Y5A0406	G.NISHMAJA PRAVALLIKA	12
43.	209Y5A0407	K. MANJUNATHA	12

44.	209Y5A0408	K. MOHAN VAMSI	12
45.	209Y5A0410	L. NIHARIKA	13
46.	209Y5A0412	M.VENKATA RAMANA	16
47.	209Y5A0414	M.REDDU SEKHAR NAIDU	12
48.	209Y5A0415	N. NARASIMHA RDDY	11
49.	209Y5A0417	PALLETI SUBHASH REDDY	13
50.	209Y5A0418	S. BALA SIDDARTHA	12
51.	209Y5A0419	T.MANASA	14

P. Krish.

Coordinator

HoD

Professor & H.O.D.
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K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA-516003
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ASSESSMENT TEST

Roll Number: _____ **Name of the Student:** _____

Time: 20 Min **(Objective Questions)** **Max.Marks: 20**

Note: Answer the following Questions and each question carries **one** mark.

1). The programmable logic controllers are used in _____ [ ]

A. Manufacturing

B. Automation

C.Both a and b

D.None of the above

2). What are the components that make the programmable logic controller work? [ ]

A. Input and output module

B. CPU

C. Power supply

D.All of the above

3). The programmable logic controller is classified into _____ [ ]

A.One B. Two C. Three D.Four

4). In fixed programmable logic controller _____ [ ]

A. Input is fixed

B.Output is fixed

C.Both a and b

D.None of the above

5). The PLC's can be programmed in _____ [ ]

A. Ladder logic, structured text

B.Instruction list, Functional block diagram

C. Sequential function chart

D.All of the above

6). In modular programmable logic controller _____ [ ]

A. Input is fixed B.Output is fixed C.Both a and b D. None of the above

7). What are the types of programmable logic controllers? [ ]

A.Fixed, uniform PLC

B.Modular, uniform PLC

C.Fixed and Modular PLC

D. None of the above

8). The components that make PLC works can be divided into _____ core areas

[ ]

A. One B. Two C.Three D.Four

9). How many operation steps does the programmable logic controller have? [ ]

A.One B.Two C.Three D.Four

10). In PLC operation _____ checks the status at the input side [ ]

A. Input scan B.Output scan C.Program scan D.None of the above

11). In PLC operation _____ retrieves the data into an output module [ ]

A. Input scan B. Output scan C.Program scan D. None of the above

12). Before PLC's was created many industries used _____ [ ]

A.Relays B.Capaciton C. Resistors D.None of the above

13). Which is the first PLC model? [ ]

A.PLC 084 B.PLC 085 C.PLC 086 D.None of the above

14). The relays consist of _____ [ ]

A.Control circuit B.Load circuit C.Both a and b D. None of the above

15). CCTV cameras are an example for _____ automation [ ]

A.Building automation B.Office automation C.Scientific automation D. Industrial automation

16). The control logic in a programmable logic controller can be programmed by _____

[ ]

A.FBD, ladder logic B.Sequential logic C.Structured text D. All of the above

17). who invented the Programmable Logic Controller (PLC)? [ ]

A.Jonas Wenstrom B.Dick Morley

C.Thomas Davenport D. None of the above

18). The programmable logic controllers are used in _____ [ ]

A.Glass and paper industry

B.Process automation plants

C. Cement manufacturing

D.All of the above

19). In modular type PLC, the PLC's are classified into _____ [ ]

A.Relay output PLC B.Transistor output PLC

C.Triac output PLC D.All of the above

20). The programmable logic controllers are classified into _____ according to physical size in modular type PLC [ ]

A.Mini PLC, Micro PLC B. Micro PLC, Nano PLC

C. Nano PLC, Mini PLC, Macro PLC D. None of the above

16/20

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA-516003
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
VALUE ADDED /CERTIFICATE COURSE ON
INDUSTRIAL AUTOMATION WITH PLC FROM 27/09/2021 TO 14/10/2021
ASSESSMENT TEST

Roll Number: 199Y1A0446 **Name of the Student:** G. Sai pravalika

Time: 20 Min **(Objective Questions)** **Max.Marks: 20**

Note: Answer the following Questions and each question carries **one** mark.

1). The programmable logic controllers are used in _____ [C]

A. Manufacturing
B. Automation
C.Both a and b
D.None of the above

2). What are the components that make the programmable logic controller work? [D]

A. Input and output module
B. CPU
C. Power supply
D.All of the above

3). The programmable logic controller is classified into _____ [b]

A.One B. Two C. Three D.Four

4). In fixed programmable logic controller _____ [b]

A. Input is fixed
B.Output is fixed
C.Both a and b
D.None of the above

5). The PLC's can be programmed in _____ [d]

A. Ladder logic, structured text
B.Instruction list, Functional block diagram
C. Sequential function chart
D.All of the above

6). In modular programmable logic controller _____ [c]

A. Input is fixed B.Output is fixed C.Both a and b D. None of the above

7). What are the types of programmable logic controllers? [a]

A.Fixed, uniform PLC

B.Modular, uniform PLC

C.Fixed and Modular PLC

D. None of the above

8). The components that make PLC works can be divided into _____ core areas

[c]

A. One B. Two C.Three D.Four

9). How many operation steps does the programmable logic controller have? [c]

A.One B.Two C.Three D.Four

10). In PLC operation _____ checks the status at the input side [a]

A. Input scan B.Output scan C.Program scan D.None of the above

11). In PLC operation _____ retrieves the data into an output module [b]

A. Input scan B. Output scan C.Program scan D. None of the above

12). Before PLC's was created many industries used _____ [a]

A.Relays B.Capaciton C. Resistors D.None of the above

13). Which is the first PLC model? [c]

A.PLC 084 B.PLC 085 C.PLC 086 D.None of the above

14). The relays consist of _____ [c]

A.Control circuit B.Load circuit C.Both a and b D. None of the above

15). CCTV cameras are an example for _____ automation [b]

A.Building automation B.Office automation C.Scientific automation D. Industrial automation

16). The control logic in a programmable logic controller can be programmed by _____

[d]

A.FBD, ladder logic B.Sequential logic C.Structured text D. All of the above

17). who invented the Programmable Logic Controller (PLC)? [d]

A.Jonas Wenstrom B.Dick Morley

C.Thomas Davenport D. None of the above

18). The programmable logic controllers are used in _____ [D]

A.Glass and paper industry

B.Process automation plants

C. Cement manufacturing

D.All of the above

19). In modular type PLC, the PLC's are classified into _____ [D]

A.Relay output PLC B.Transistor output PLC

C.Triac output PLC D.All of the above

20). The programmable logic controllers are classified into _____ according to physical size in modular type PLC [C]

A.Mini PLC, Micro PLC B. Micro PLC, Nano PLC

C. Nano PLC, Mini PLC, Macro PLC D. None of the above

18/20

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA-516003
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
VALUE ADDED /CERTIFICATE COURSE ON
INDUSTRIAL AUTOMATION WITH PLC FROM 27/09/2021 TO 14/10/2021
ASSESSMENT TEST

Roll Number: 207Y5A0402 **Name of the Student:** E. Neelavathi

Time: 20 Min **(Objective Questions)** **Max.Marks: 20**

Note: Answer the following Questions and each question carries **one** mark.

1). The programmable logic controllers are used in _____ [C]

A. Manufacturing
B. Automation
C.Both a and b
D.None of the above

2). What are the components that make the programmable logic controller work? [D]

A. Input and output module
B. CPU
C. Power supply
D.All of the above

3). The programmable logic controller is classified into _____ [B]

A.One B. Two C. Three D.Four

4). In fixed programmable logic controller _____ [C]

A. Input is fixed
B.Output is fixed
C.Both a and b
D.None of the above

5). The PLC's can be programmed in _____ [D]

A. Ladder logic, structured text
B.Instruction list, Functional block diagram
C. Sequential function chart
D.All of the above

6). In modular programmable logic controller _____ [C]

A. Input is fixed B.Output is fixed C.Both a and b D. None of the above

7). What are the types of programmable logic controllers? [C]

A.Fixed, uniform PLC

B.Modular, uniform PLC

C.Fixed and Modular PLC

D. None of the above

8). The components that make PLC works can be divided into _____ core areas

[C]

A. One B. Two C.Three D.Four

9). How many operation steps does the programmable logic controller have? [C]

A.One B.Two C.Three D.Four

10). In PLC operation _____ checks the status at the input side [B]

A. Input scan B.Output scan C.Program scan D.None of the above

11). In PLC operation _____ retrieves the data into an output module [B]

A. Input scan B. Output scan C.Program scan D. None of the above

12). Before PLC's was created many industries used _____ [A]

A.Relays B.Capaciton C. Resistors D.None of the above

13). Which is the first PLC model? [A]

A.PLC 084 B.PLC 085 C.PLC 086 D.None of the above

14). The relays consist of _____ [C]

A.Control circuit B.Load circuit C.Both a and b D. None of the above

15). CCTV cameras are an example for _____ automation [B]

A.Building automation B.Office automation C.Scientific automation D. Industrial automation

16). The control logic in a programmable logic controller can be programmed by _____

[D]

A.FBD, ladder logic B.Sequential logic C.Structured text D. All of the above

17). who invented the Programmable Logic Controller (PLC)? [C]

A.Jonas Wenstrom B.Dick Morley

C.Thomas Davenport D. None of the above

18). The programmable logic controllers are used in _____ [D]

A.Glass and paper industry

B.Process automation plants

C. Cement manufacturing

D.All of the above

19). In modular type PLC, the PLC's are classified into _____ [D]

A.Relay output PLC B.Transistor output PLC

C.Triac output PLC D.All of the above

20). The programmable logic controllers are classified into _____ according to physical size in modular type PLC [C]

A.Mini PLC, Micro PLC B. Micro PLC, Nano PLC

C. Nano PLC, Mini PLC, Macro PLC D. None of the above

16/20

K.S.R.M. COLLEGE OF ENGINEERING (AUTONOMOUS), KADAPA-516003
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
VALUE ADDED /CERTIFICATE COURSE ON
INDUSTRIAL AUTOMATION WITH PLC FROM 27/09/2021 TO 14/10/2021
ASSESSMENT TEST

Roll Number: 199Y1A04E8 **Name of the Student:** S. SADAK ALI

Time: 20 Min **(Objective Questions)** **Max.Marks: 20**

Note: Answer the following Questions and each question carries **one** mark.

1). The programmable logic controllers are used in _____ [C]

A. Manufacturing
B. Automation
C.Both a and b
D.None of the above

2). What are the components that make the programmable logic controller work? [A]

A. Input and output module
B. CPU
C. Power supply
D.All of the above

3). The programmable logic controller is classified into _____ [B]

A.One B. Two C. Three D.Four

4). In fixed programmable logic controller _____ [D]

A. Input is fixed
B.Output is fixed
C.Both a and b
D.None of the above

5). The PLC's can be programmed in _____ [D]

A. Ladder logic, structured text
B.Instruction list, Functional block diagram
C. Sequential function chart
D.All of the above

6). In modular programmable logic controller _____ [C]

A. Input is fixed B.Output is fixed C.Both a and b D. None of the above

7). What are the types of programmable logic controllers? [C]

A.Fixed, uniform PLC

B.Modular, uniform PLC

C.Fixed and Modular PLC

D. None of the above

8). The components that make PLC works can be divided into _____ core areas

[C]

A. One B. Two C.Three D.Four

9). How many operation steps does the programmable logic controller have? [B]

A.One B.Two C.Three D.Four

10). In PLC operation _____ checks the status at the input side [D]

A. Input scan B.Output scan C.Program scan D.None of the above

11). In PLC operation _____ retrieves the data into an output module [B]

A. Input scan B. Output scan C.Program scan D. None of the above

12). Before PLC's was created many industries used _____ [A]

A.Relays B.Capaciton C. Resistors D.None of the above

13). Which is the first PLC model? [A]

A.PLC 084 B.PLC 085 C.PLC 086 D.None of the above

14). The relays consist of _____ [C]

A.Control circuit B.Load circuit C.Both a and b D. None of the above

15). CCTV cameras are an example for _____ automation [B]

A.Building automation B.Office automation C.Scientific automation D. Industrial automation

16). The control logic in a programmable logic controller can be programmed by ____

[D]

A.FBD, ladder logic B.Sequential logic C.Structured text D. All of the above

17). who invented the Programmable Logic Controller (PLC)? [C]

A.Jonas Wenstrom B.Dick Morley

C.Thomas Davenport D. None of the above

18). The programmable logic controllers are used in _____ [D]

A.Glass and paper industry

B.Process automation plants

C. Cement manufacturing

D.All of the above

19). In modular type PLC, the PLC's are classified into _____ [D]

A.Relay output PLC B.Transistor output PLC

C.Triac output PLC D.All of the above

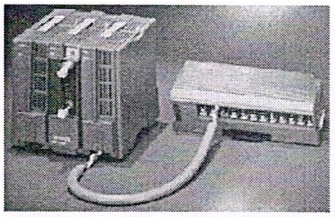
20). The programmable logic controllers are classified into _____ according to physical

size in modular type PLC [C]

A.Mini PLC, Micro PLC B. Micro PLC, Nano PLC

C. Nano PLC, Mini PLC, Macro PLC D. None of the above

PROGRAMMABLE LOGIC CONTROLLERS



Types of control

- Temporal -- control based in time
- State -- control based in state level
- Hybrid – both temporal and state

Objectives

- To define the basic components of a PLC
- To apply PLC based control to a manufacturing system
- To be identify instrumentation required to implement a PLC control system
- To program a PLC
- To implement a PLC control program and hardware

PURPOSE OF Programmable Logic Controllers (PLCs)

- Initially designed to replace relay logic boards
  - Sequence device actuation
  - Coordinate activities
- Accepts input from a series of switches
- Sends output to devices or relays

FUNCTIONS OF CONTROLLERS

- 1) on-off control,
- 2) sequential control,
- 3) feedback control, and
- 4) motion control.

CONTROL DEVICES

1) mechanical control - cam, governor, etc.,

2) pneumatic control - compressed air, valves, etc.

3) electromechanical control - switches, relays, a timer, counters, etc,

4) electronics control - similar to electromechanical control, except uses electronic switches.

5) computer control.

PROGRAMMABLE LOGIC CONTROLLER

Invented in 1968 as a substitute for hardwired relay panels.

"A digitally operating electronic apparatus which uses a programmable memory for the internal storage of instructions by implementing specific functions such as logic sequencing, timing, counting, and arithmetic to control, through digital or analog input/output modules, various types of machines or processes. The digital computer which is used to perform the functions of a programmable controller is considered to be within this scope. Excluded are drum and other similar mechanical sequencing controllers."

National Electrical Manufacturing Association (NEMA)

VENDORS

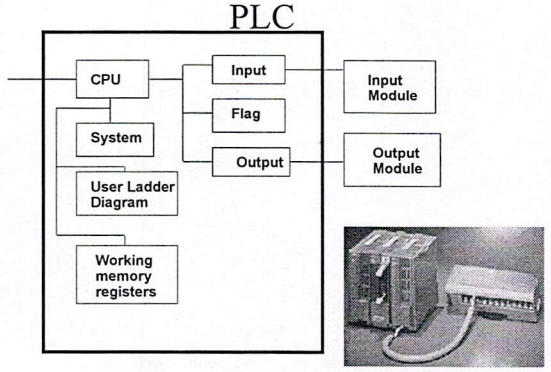
Rockwell

GE/Fanuc

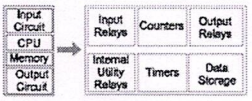
Schnieder

etc.

PLC



PLC Configuration



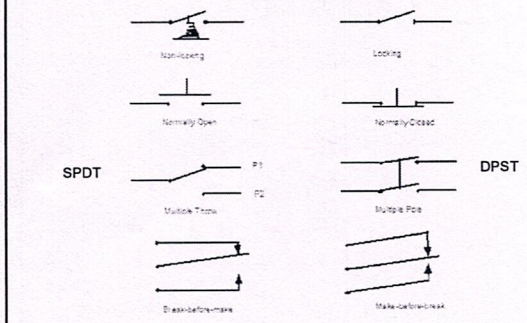
What devices does a PLC interact with?

- INPUT RELAYS-(contacts)These are connected to the outside world. They physically exist and receive signals from switches, sensors, etc. Typically they are not relays but rather they are transistors.
- INTERNAL UTILITY RELAYS-(contacts) These do not receive signals from the outside world nor do they physically exist. They are simulated relays and are what enables a PLC to eliminate external relays. There are also some special relays that are dedicated to performing only one task. Some are always on while some are always off. Some are on only once during power-on and are typically used for initializing data that was stored.
- COUNTERS-These again do not physically exist. They are simulated counters and they can be programmed to count pulses. Typically these counters can count up, down or both up and down. Since they are simulated they are limited in their counting speed. Some manufacturers also include high-speed counters that are hardware based. We can think of these as physically existing. Most times these counters can count up, down or up and down.

What devices does a PLC interact with? Continued

- TIMERS-These also do not physically exist. They come in many varieties and increments. The most common type is an on-delay type. Others include off-delay and both retentive and non-retentive types. Increments vary from 1ms through 1s.
- OUTPUT RELAYS-(coils)These are connected to the outside world. They physically exist and send on/off signals to solenoids, lights, etc. They can be transistors, relays, or triacs depending upon the model chosen.
- DATA STORAGE-Typically there are registers assigned to simply store data. They are usually used as temporary storage for math or data manipulation. They can also typically be used to store data when power is removed from the PLC. Upon power-up they will still have the same contents as before power was removed. Very convenient and necessary!!

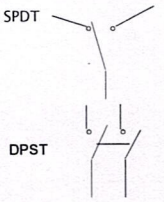
SWITCHES



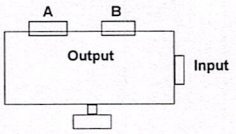
TERMS

Throw - number of states

Pole - number of connecting moving parts (number of individual circuits).



A serial switch box (A-B box) has two 25 pin serial ports to switch from.



How is this switch classified?

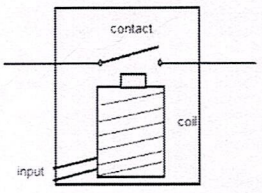
TYPES OF SWITCHES

1. Basic switch, operated by a mechanical level,
2. Push-button switch,
3. Slide switch,
4. Thumbwheel switch,
5. Limit switch,
6. Proximity switch, and
7. Photoelectric switch.

RATING: voltage, current

RELAYS

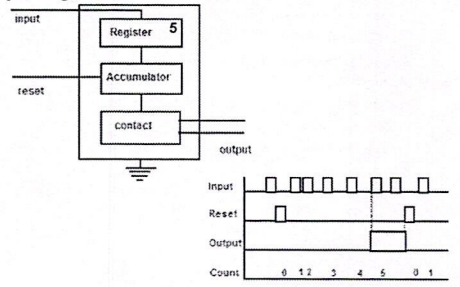
A switch whose operation is activated by an electromagnet is called a "relay"



Relay coil **Output contact**

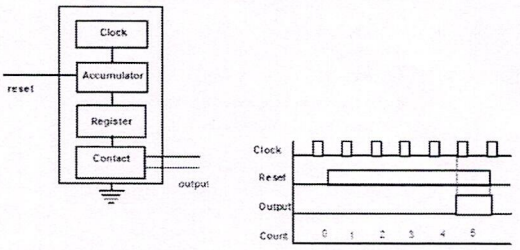
COUNTER

Digital counters output in the form of a relay contact when a preassigned count value is reached.



TIMER

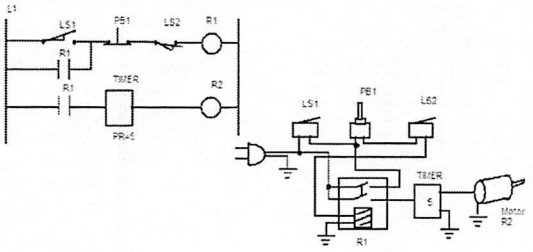
A timer consists of an internal clock, a count value register, and an accumulator. It is used for or some timing purpose.



Time 5 seconds.

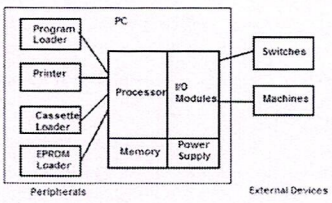
AN EXAMPLE OF RELAY LOGIC

For process control, it is desired to have the process start (by turning on a motor) five seconds after a part touches a limit switch. The process is terminated automatically when the finished part touches a second limit switch. An emergency switch will stop the process any time when it is pushed.



PLC ARCHITECTURE

Programmable controllers replace most of the relay panel wiring by software programming.



A typical PLC

PLC COMPONENTS

1. Processor — Microprocessor based, may allow arithmetic operations, logic operators, block memory moves, computer interface, local area network, functions, etc.

2. Memory — Measured in words.
   - ROM (Read Only Memory),
   - RAM (Random Access Memory),
   - PROM (Programmable Read Only Memory),
   - EEPROM (Electronically Erasable Programmable ROM),
   - EPROM (Erasable Programmable Read Only Memory),
   - EAPROM (Electronically Alterable Programmable Read Only Memory), and
   - Bubble Memory.

PLC COMPONENTS

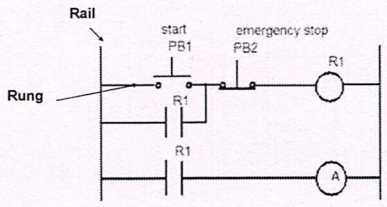
3. I/O — Modular plug-in periphery
   - AC voltage input and output,
   - DC voltage input and output,
   - Low level analog input,
   - High level analog input and output,
   - Special purpose modules, e.g.., high speed timers,
   - Stepping motor controllers, etc. PID, Motion

4. Power supply AC power

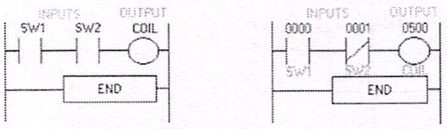
5. Peripheral — Hand held programmer (loader),
   - CRT programmer,
   - Operator console,
   - Printer,
   - Simulator,
   - EPROM loader,
   - Cassette loader,
   - Graphics processor, and
   - Network communication interface. MAP, LAN

LADDER DIAGRAM

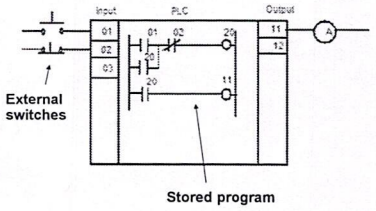
A ladder diagram (also called contact symbology) is a means of graphically representing the logic required in a relay logic system.



Ladder Representation

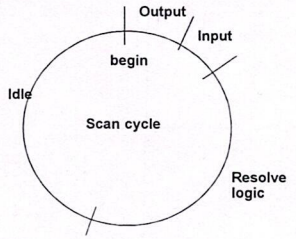


PLC WIRING DIAGRAM



SCAN

A PLC resolves the logic of a ladder diagram (program) rung by rung, from the top to the bottom. Usually, all the outputs are updated based on the status of the internal registers. Then the input states are checked and the corresponding input registers are updated. Only after the I/Os have been resolved, is the program then executed. This process is run in a endless cycle. The time it takes to finish one cycle is called the scan time.



PLC INSTRUCTIONS

1) Relay,
2) Timer and counter,
3) Program control,
4) Arithmetic,
5) Data manipulation,
6) Data transfer, and
7) Others, such as sequencers.

LOGIC STATES

ON : TRUE, contact closure, energize, etc.

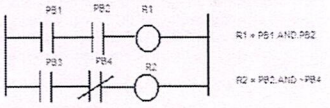
OFF: FALSE, contact open , de-energize, etc.

Do not confuse the internal relay and program with the external switch and relay. Internal symbols are used for programming. External devices provide actual interface.

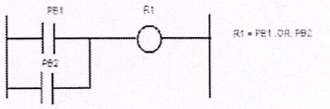
(In the notes we use the symbol "~" to represent negation. AND and OR are logic operators.)

AND and OR LOGIC

AND

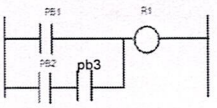


OR



COMBINED AND & OR

R1 = PB1 .OR. (PB2 .AND. PB3)



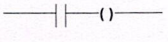
RELAY

A Relay consists of two parts, the coil and the contact(s).

Contacts:

a. Normally open -| |-
b. Normally closed -|/|-
c. Off-on transitional -|↑|-
d. On-off transitional -|↓|-

Coil:



a. Energize Coil -( )-
b. De-energize -(/)-
c. Latch -(L)-
d. Unlatch -(U)-

TIMERS AND COUNTERS

Timers:

a. Retentive on delay -(RTO)-
b. Retentive off delay -(RTF)-
c. Reset -(RST)-

	Input		
	True	False	True
RTO	counting	stop	counting resume
RTF	stop	counting	stop

RTO reach PR value, output ON
RTF reach PR value, output OFF

PR value in 0.1 second

Counter:

a. Counter up -(CTU)-
b. Counter down -(CTD)-
c. Counter reset -(CTR)-

SEQUENCER

Sequencers are used with machines or processes involving repeating operating cycles which can be segmented into steps.

	Output			
Step	A	B	C	Dwell time
1	ON	OFF	OFF	5 sec.
2	ON	ON	OFF	10 sec.
3	OFF	OFF	ON	3 sec.
4	OFF	ON	OFF	9 sec.

Rockwell/ Allen Bradley PLC

I/O points are numbered, they correspond to the I/O slot on the PLC.

For A-B controller used in our lab

I/O uses 1-32

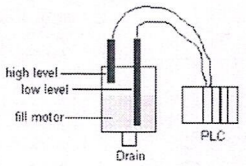
Internal relays use 033 - 098

Internal timers/counters/sequencers use 901-932

Status 951-982

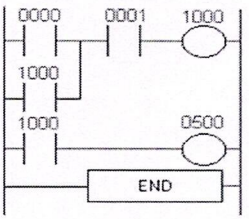
Programming a PLC

Oil is consumed randomly. The tank needs to be refilled by turning on a pump. Two hydrostatic switches are used to detect a high and low level.

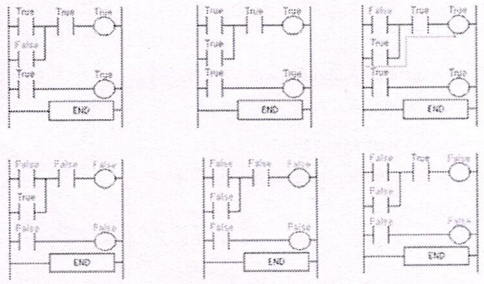


Dispensing oil from a tank

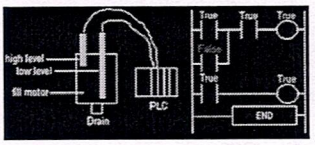
Ladder Logic for Tank



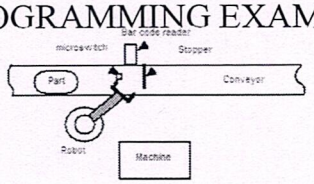
Logic for Ladder Solution



How does it work?

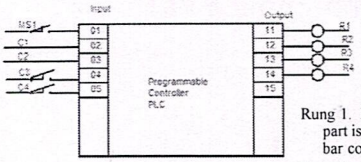


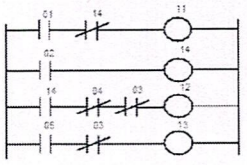
PROGRAMMING EXAMPLE 1



id	description	state	explanation
MSI	microswitch	1	part arrive
R1	output to bar code reader	1	scan the part
C1	input from bar code reader	1	right part
R2	output robot	1	loading cycle
R3	output robot	1	unloading cycle
C2	input from robot	1	robot busy
R4	output to stopper	1	stopper up
C3	input from machine	1	machine busy
C4	input from machine	1	task complete

SOLUTION





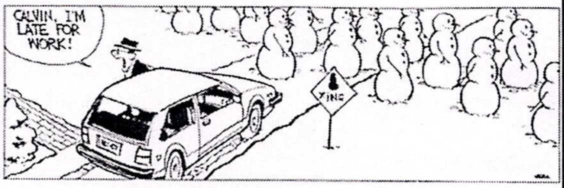
Rung 1. If part arrives and no part is stopped, trigger the bar code reader.

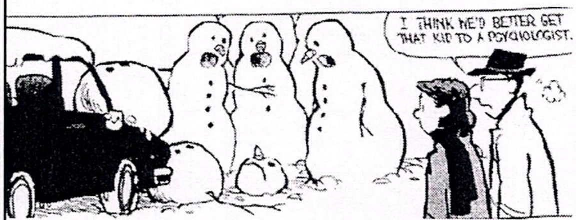
Rung 2. If it is a right part, activate the stopper.

Rung 3. If the stopper is up, the machine is not busy and the robot is not busy, load the part onto the machine.

Rung 4. If the task is completed and the robot is not busy, unload the machine.

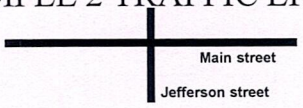

WHERE ARE MY GLASSES? I THOUGHT THEY WERE RIGHT HERE.
HMM... I PUT THEM DOWN... I WENT TO GET MY BOOK... I TOLD CALVIN TO SHOVEL THE WALK...
!
WHERE COULD THEY BE?!


CALVIN, I'M LATE FOR WORK!


I THINK HE'D BETTER GET THAT KID TO A PSYCHOLOGIST.

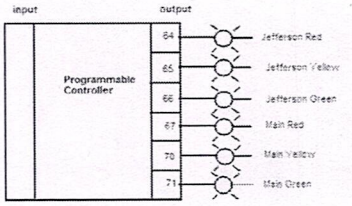

TOO
NO!
CALVIN'S Dad UNFAIR
LATER BEDTIMES FEWER BATHS
Egad! Bad Dad!
NO ONE ELSE AT THE OFFICE TALKS ABOUT THIS KIND OF THING.

EXAMPLE 2 TRAFFIC LIGHTS

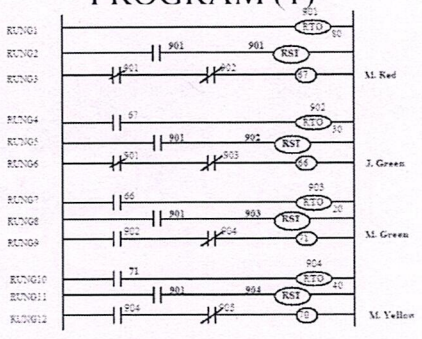


Cycle time			
Street	Red	Yellow	Green
Main	3	1	4
Jefferson	5	1	2

WIRING DIAGRAM



PROGRAM (1)



PROGRAM (2)