

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2026**

**INDUSTRIAL AUTOMATION AND CONTROL**

[Maximum Marks: 75]

[Time: 3 Hours]

**PART-A**

**I. Answer ‘all’ the following questions in one word or one sentence. Each question carries ‘one’ mark.**

**(9 x 1 = 9 Marks)**

		Module Outcome	Cognitive level
1.	Write one advantage of cascaded control.	M1.03	R
2.	----- control configuration has one measurement and several manipulated variables.	M1.04	U
3.	Write the expansion of DCS.	M2.02	R
4.	Draw the PLC ladder diagram for NAND gate.	M2.04	R
5.	Name any two learning methods of ANN.	M3.04	R
6.	Define Fuzzy set.	M3.05	R
7.	Write the full form of Lab VIEW.	M3.02	R
8.	In which zone a flammable atmosphere is present continuously for a long time.	M4.01	U
9.	Name any one component in Safety Instrumentation System.	M4.04	R

**PART-B**

**II. Answer any ‘eight’ questions from the following. Each question carries ‘three’ marks.**

**(8 x 3 = 24 Marks)**

		Module Outcome	Cognitive level
1.	Draw an example of interactive variable process control.	M1.01	U
2.	Draw the block diagram of feedback control system.	M1.02	R
3.	Explain PLC scan time.	M2.03	U
4.	Draw the Block diagram of Direct Digital control.	M2.01	R
5.	Draw the model of an artificial neuron.	M3.03	R
6.	Write a short note on Virtual Instrumentation.	M3.01	U
7.	Write the features of intelligent control.	M3.07	U
8.	Explain any one classification of Hazardous area.	M4.01	U
9.	List the criteria for selection of equipment based on hazardous area.	M4.02	R
10.	Explain the types of gas detectors.	M4.03	U

**PART-C**

Answer 'all' questions from the following. Each question carries 'seven' marks.

**(6 x 7 = 42 Marks)**

		Module Outcome	Cognitive level
III.	With a neat diagram explain ratio control. <b>OR</b>	M1.03	U
IV.	Draw the block diagram of Adaptive control system.	M1.03	R
V.	Describe Override control with an example. <b>OR</b>	M1.04	U
VI.	Explain Auctioneering control with an example.	M1.04	U
VII.	Explain the block diagram of PLC. <b>OR</b>	M2.03	U
VIII.	Describe Data logger with suitable block diagram.	M2.01	U
IX.	Draw and explain the block diagram of SCADA. <b>OR</b>	M2.05	U
X.	Explain different methods of programming in PLC.	M2.03	U
XI.	Illustrate the block diagram of Fuzzy controller. <b>OR</b>	M3.06	U
XII.	Compare text-based programming and graphical programming.	M3.02	U
XIII.	Draw the P&ID symbols of a) Control valve                      b) Pneumatic Actuator c) Orifice Plate                        d) Heat Exchanger. <b>OR</b>	M4.05	R
XIV.	Explain the concept of safety instrumentation system and write its layers.	M4.04	U

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