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(Revision – 2021)

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Reg. No……
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2025

MECHATRONICS

[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.	State any one mechatronics application.	M1.01	R
2.	State any one factor that effecting the selection of sensor.	M1.04	R
3.	List any one component in measurement system terminology.	M1.02	R
4.	List any one mechanical Actuators.	M2.01	R
5.	List any one solid state switches.	M2.06	R
6.	List any one application of Arduino board.	M3.06	R
7.	Identify the programming code for shift register function.	M3.04	U
8.	List any one application that robot used in Material transfer application.	M4.02	R
9.	List any one programming method for the programming of robot.	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.	List the any three devices for measuring fluid flow.	M1.03	R
2.	List any three sensors used in automatic water level controller.	M1.05	R
3.	List any three devices working in the principle of closed loop control system.	M1.02	R
4.	Explain the difference between contact and Non-contact type sensor.	M1.03	U
5.	List any three rotary actuators .	M2.05	R
6.	State any three application of PLC.	M3.01	R
7.	State any three application of robot in Assembly & Inspection.	M4.03	R
8.	State the three axis for Pick & Place Robot.	M4.05	R
9.	Define Automation.	M4.01	R
10.	List any three factors considering while selecting of robot for machine loading and unloading.	M4.02	R

PART-C

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

(6 x 7 = 42 Marks)

		Module Outcome	Cognitive level
III.	Draw and Explain Inductive proximity sensor.	M1.03	A
	OR		
IV.	Explain different types of sensors used in washing machine.	M1.05	U
V.	Draw and explain Hydraulics system.	M2.02	A
	OR		
VI.	Explain cylinder sequencing with figure.	M2.04	U
VII.	Draw and explain process control valve.	M2.05	A
	OR		
VIII.	Explain the working principle of stepper motor.	M2.07	U
IX.	Draw and explain the block diagram of Programmable logic controller (PLC).	M3.01	A
	OR		
X.	Explain Timers in ladder programming.	M3.04	U
XI.	Explain the selection of PLC.	M3.05	U
	OR		
XII.	Explain bathroom scale.	M3.06	U
XIII.	Explain Robot anatomy.	M4.01	U
	OR		
XIV.	Explain Robot Activation and feedback components.	M4.03	U

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