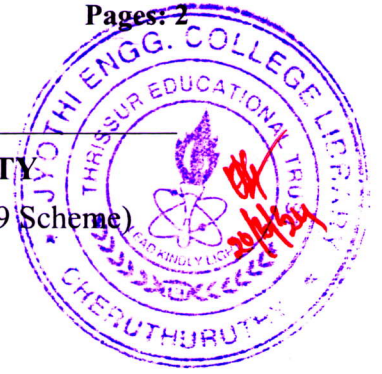


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fourth Semester B.Tech Degree (R,S) Examination May 2024 (2019 Scheme)

**Course Code: MRT204****Course Name: SENSORS AND ACTUATORS**

Max. Marks: 100

Duration: 3 Hours

PART A*(Answer all questions; each question carries 3 marks)*

		Marks
1	Compare soft magnetic and hard magnetic materials	3
2	What are the advantages and disadvantages of VR sensor?	3
3	List any three applications of magnetic sensors	3
4	What is a hall effect sensor	3
5	Mention any three requirements of a magnetic speed sensors	3
6	Write any three applications of solenoid actuators	3
7	Define rotary actuators and list its types	3
8	State the limitations of cylindrical actuators.	3
9	Write down the steps for creation of program for NC machine	3
10	List the application of encoders	3

PART B*(Answer one full question from each module, each question carries 14 marks)***Module -1**

11	a) With a neat sketch explain the working of VR sensor	7
	b) Summarize the need and benefits of coating technology.	7
12	a) Differentiate between diamagnetic, paramagnetic and ferromagnetic materials	7
	b) Analyse the various methods of magnetic materials market.	7

Module -2

13	a) Discuss in detail about the magnetic sensors	7
	b) Discuss about linear solenoids working principle and explain about its types	7
14	a) Explain the construction and working principle of magnetic speed sensor in detail.	7
	b) Illustrate in detail about the solid state sensors and its design.	7

Module -3

15	a) Differentiate Linear and Latching solenoid actuators with neat Sketches?	14
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- 16 a) Discuss in detail the disk and plunger type configurations of solenoid actuators 14

Module -4

- 17 a) With a neat sketch, explain the construction and working principle of Disk rotary actuator. 14

- 18 a) With a neat sketch, explain the construction and working principle of cylindrical rotary actuator. 14

Module -5

- 19 a) What are the classifications of NC machine 7

- b) Explain the feedback devices used in NC machine 7

- 20 a) Define the construction and working of stepper motor? 7

- b) Explain backpressure sensor 7
