



Vivekanand Education Society's Institute of Technology
An Autonomous Institute Affiliated to University of Mumbai

**End Semester Examination
Summer 2024**

Max marks: 60

Branch: Automation & Robotics

Name of the Course: Components of Automation and Robotics

Course code: ARC405

Duration: 2 hours

Semester: IV

QP Code: R23-ARC405_012023-24

- N.B.** (1) Attempt any three out of the five questions.
(2) Figures to the right indicate full marks.
(3) Assume suitable data if necessary

	Marks
Q1. a) What is Automation? state industrial applications.	5
b) What is a valve positioner? Explain its effect on performance of the valve.	5
c) Compare between Relays and contactors.	5
d) Explain the need and working of stepper motor.	5
Q.2 (a) What is an Alarm Annunciator? Explain with neat sketch its working and sequences	10
(b) State need for control valves in industry ? Explain working of single seated globe valve with sliding stem actuator.	10
Q.3 (a) Explain various components used to develop robotic arm.	10
(b) Explain in detail control valve specifications.	10
Q.4 (a) Explain with neat sketches working of various panel switches	10
(b) Explain with block diagram working of SMART Pressure Transmitter .	10
Q.5 (a) Why are converters required ? Describe working of electrical to pneumatic converter.	10
(b) Explain the construction and working of Differential pressure transmitter. State its application in detail.	10

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