



CBCS SCHEME

21ME653

Sixth Semester B.E./B.Tech. Degree Examination, June/July 2026 Mechatronics

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Briefly explain the evaluation of mechatronics. (05 Marks)
b. Explain car parking system. (07 Marks)
c. List the differences between open loop and closed loop feedback system. (08 Marks)

OR

- 2 a. List the various differences between sensors and transducers. (06 Marks)
b. With the help of diagram explain photodiodes. (06 Marks)
c. Explain proximity sensors and LVDT. (08 Marks)

Module-2

- 3 a. Explain analog to digital and digital to analog conversion system. (08 Marks)
b. Explain four methods of signal conditioning. (08 Marks)
c. With the help of diagrams explain any one filter. (04 Marks)

OR

- 4 a. With the help of diagrams explain working of relay and four types of switches. (10 Marks)
b. With the help of neat sketch explain DC servomotor. (10 Marks)

Module-3

- 5 a. Define microcontroller. Explain the evaluation of microprocessor. (10 Marks)
b. With the help of neat sketch explain 8085A microprocessor architecture. (10 Marks)

OR

- 6 a. Explain types of buses and registers. (10 Marks)
b. Write a short notes on
i) Accumulator
ii) Program counter
iii) Fetch cycle
iv) ALV (10 Marks)

Module-4

- 7 a. Define PLC. With the help of symbols explain the components used in ladder logic input and output sides. (10 Marks)
b. With the help of diagram explain conveyor system ladder logic diagram. (10 Marks)

OR

- 8 a. Draw and explain ladder logic diagram for lifting water from the sump to overhead tank using PLC. (10 Marks)
b. What are the criteria's used for selection of PLC? Explain them briefly. (10 Marks)

Module-5

- 9 a. Explain linear motion guideways used in CNC machines. (10 Marks)
b. With the help of diagram, explain recirculating ball screws. (10 Marks)

OR

- 10 a. Explain mechatronics system design process applied for multidisciplinary approach. (10 Marks)
b. Explain with the help of diagram pick and place robot used for material handling in industry. (10 Marks)
