

Reg. No. :

Question Paper Code : 60576

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2026.

Fifth Semester

Electrical and Electronics Engineering

EE8551 – MICROPROCESSORS AND MICROCONTROLLERS

(Common to Electronics and Instrumentation Engineering/Instrumentation and Control Engineering)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the two applications of the 8085 microprocessor.
2. What is a vectored interrupt?
3. Mention the different addressing modes supported by the 8085 processor.
4. Define subroutine and stack.
5. What is the purpose of 'B' register in the 8051 microcontroller?
6. Mention any four advantages of the 8051 microcontroller.
7. What does an A/D converter mean?
8. Give the operation modes of 8255.
9. How is a pulse generated from a microcontroller for stepper motor control?
10. What is the baud rate?

PART B — (5 × 13 = 65 marks)

11. (a) Explain the 8085 microprocessor's functional description using a clear illustration.

Or

- (b) Draw the timing diagram for the memory read cycle and explain.

12. (a) Describe the addressing mode. Give an explanation of the addressing mode for each of the following instructions.

- (i) STA6350H
- (ii) CMA
- (iii) MOV A, M
- (iv) MOV D, E
- (v) MVI A, A7H

Or

- (b) Explain any ten data transfer, data manipulation and control instructions found in the 8085 microprocessor using appropriate examples.

13. (a) Sketch and describe the 8051 microcontroller's architecture.

Or

- (b) Describe the purposes of the 8051 microcontroller's I/O ports with neat sketches.

14. (a) Describe the 8259 programmable interrupt controller's internal structure and main control word format.

Or

- (b) Discuss the various modes of operation of the programmable interval timer, 8254.

15. (a) Demonstrate with a neat diagram, a 4×4 keyboard interfacing with 8051 microcontroller.

Or

- (b) Explain with a neat diagram the closed loop control of the servo motor using a microcontroller.

PART C — (1 × 15 = 15 marks)

16. (a) Describe in detail the architecture, functions and registers of the 8255 PPI.

Or

- (b) Discuss the internal architecture and registers of the 8279 keyboard/display controller with a neat diagram.