Reg. No. : | | | | | | | | | | | | |

**Question Paper Code : 41034**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2024.

Fourth Semester

Electrical and Electronics Engineering

EE 3404 — MICROPROCESSOR AND MICROCONTROLLER

(Regulations 2021)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the bits in the flag register of 8085 microprocessor.
2. State the power supply and typical clock frequency of 8085 microprocessor.
3. List the addressing modes of 8085 microprocessor.
4. State any two features of Stack.
5. Recall the function of TXD and RXD lines in 8251 USART.
6. List any four features of 8254 Timer/Counter.
7. Summarize the interrupts in 8051.
8. State the use of IDE for programming the controller.
9. List any four instructions of PIC microcontroller with its functions.
10. State the advantages of RISC microcontrollers.

PART B — (5 × 13 = 65 marks)

11. (a) Draw the functional block diagram of 8085 microprocessor and Explain the timing and control unit.

Or

(b) Explain the following with respect to 8085 microprocessor

(i) Address and data bus (4)

(ii) Status signals (3)

(iii) Serial I/O signals (3)

(iv) Hardware interrupt signals (3)

12. (a) Explain the various Addressing modes of 8085 microprocessor with examples.

Or

(b) Describe the application of look up tables and subroutines while programming using suitable examples.

13. (a) Draw the internal block diagram of 8259 programmable interrupt controller and explain its features, functions of IMR, IRR and ISR registers.

Or

(b) Explain the ADC conversion process using a flow chart by Interfacing A/D converter with 8085.

14. (a) Explain the various addressing modes supported by 8051 microcontroller using appropriate instruction.

Or

(b) Describe the four operating modes of 8051 Serial ports.

15. (a) Explain the memory organization of any one PIC microcontroller.

Or

(b) Illustrate in detail the operation of timers in PIC microcontroller.

PART C — ($1 \times 15 = 15$ marks)

16. (a) Develop an 8085 based assembly level language program and algorithm to implement blinking of two LEDs, when a push button is pressed.

Or

(b) Draw the interface diagram of an 8051-microcontroller based temperature control system. Develop suitable algorithm using Assembly Language program to control the system.

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