Question Paper Code : 20459

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Fifth/Sixth Semester

Electrical and Electronics Engineering

EE 6502 — MICROPROCESSORS AND MICROCONTROLLERS

(Common to : Electronics and Instrumentation Engineering/
Instrumentation and Control Engineering/Manufacturing Engineering/
Robotics and Automation Engineering)

(Regulations 2013)

(Also common to : PTEE 6502 — Microprocessors and Microcontrollers
for B.E. (Part-Time) – Fourth Semester – Electrical and Electronics Engineering —
Regulation 2014)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the registers of 8085 processor.

2. State any four pins of 8085 processor which are used to generate control and status signals.

3. State any four data transfer instructions and their function.

4. Define subroutine.

5. State any four inbuilt features of 8051 microcontroller.

6. How multiplication is performed in 8085 and 8051?

7. Find the control word of 8255 if port A is configured as input and port B is configured as output in mode 0.

8. State the application of 8251 and 8279 ICs.

9. Specify the difference between MOV and MOVX instructions.

10. State any four applications of microcontroller.

PART B — (5 × 13 = 65 marks)

11. (a) With neat block diagram, explain the various functional building blocks of 8085 processor.

Or

(b) Define vector address. List the various interrupts of 8085 processor and elucidate the use of Interrupt service routine.

12. (a) Define addressing mode. Identify the addressing mode of the following instructions and explain them.

(i) STA 6350H

(ii) CMA

(iii) MOV A,M

(iv) MOV D,E

(v) MVI A,A7H.

Or

(b) Develop an algorithm and 8085 assembly language program to sort 100 byte type data. Explain the instructions used in the program.

13. (a) Explain the pinouts of 8051 microcontroller.

Or

(b) Describe the timing diagram of external data memory read cycle of 8051.

14. (a) (i) Explain the architecture of 8259. (9)

(ii) How 8259 is interfaced with 8085 or 8051? (4)

Or

(b) Explain the Interfacing of DAC with 8051 or 8085 with neat diagram and write a program for generating any typical waveform.

15. (a) Explain the various bit manipulation instructions in 8051 with examples.

Or

(b) Develop a 8051 ALP to evaluate an arithmetic expression (A-B) X C where A, B, C are 8 bit data in internal memory. Assume A>B and store the result in external memory. Explain the program developed.

PART C — (1 × 15 = 15 marks)

16. (a) Design a system using 8085 or 8051 to blink four LEDs.

Or

(b) Design a stepper motor control system using 8051 microcontroller.