Reg. No. : [　|　|　|　|　|　|　|　|　|　|　|　]

Question Paper Code : 90522

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2022.

Fifth Semester

Electrical and Electronics Engineering

EE 8551 – 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 flags in 8085 microprocessor.

2.   How many machine cycles are needed to execute STA 1800?

3.   Write the operation carried out when PCHL instruction is executed in 8085.

4.   Which are the instructions used for subroutine handling in 8085?

5.   How do you select the register bank in 8051 microcontroller?

6.   Write the RAM and ROM capacity in 8051 microcontroller.

7.   Mention the applications that use ADC and DAC.

8.   List the various modes of 8254 Timer.

9.   Write the operation carried out when MOVXA, @R1 instruction is executed.

10. List out the commands used in LCD.

PART B — (5 × 13 = 65 marks)

11. (a)   Explain the interrupt structure of 8085 microprocessor.   (13)

Or

     (b)   Explain the addressing modes of 8085 microprocessor with one example for each.   (13)

12. (a) Write 8085 assembly language program to arrange the given array having ten *byte* type data in ascending order. (13)

Or

(b) Write an assembly language program for 8085 microprocessor to convert binary number 'C9H' to BCD number and store the result in internal RAM. (13)

13. (a) With the help of neat diagram explain the architecture of 8051 microcontroller in detail. (13)

Or

(b) Write about the Mode-1 and Mode-2 timer operations with the control registers used in 8051. (13)

14. (a) Draw and explain the block diagram of 8255 in detail. Explain control word definition of the same. (9+4)

Or

(b) With neat block diagram, explain the description and function of 8279. (13)

15. (a) Write in detail about the interfacing of keyboard with 8051 microcontroller. (13)

Or

(b) Discuss on control of servo motor by 8051 microcontroller. (13)

PART C — (1 × 15 = 15 marks)

16. (a) Write the assembly language program for the 8051 Microcontroller to run the stepper motor having step angle of 1.8° for 180° rotation in anti-clockwise direction. Draw the necessary diagrams. (15)

Or

(b) Draw the interfacing diagram and write 8051 assembly program to display the message *INDIA* in a 20 × 2 LCD. (15)

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