Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 80375

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Fourth Semester

Computer Science and Engineering

CS 2252/CS 42/EC 1257/080250010/10144 CS 403/10144 EC 506 –
MICROPROCESSORS AND MICROCONTROLLERS

(Common to Information Technology)

(Regulations 2008/2010)

(Also common to PTCS 2252/10144 EC 506 – Microprocessor and Microcontrollers
for B.E. (Part–Time) Fourth Semester – Computer Science and Engineering–
Regulations 2009/2010)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   MVI A, FF   xx: STA 4800

         INR A   JMP Back

         JC xx:

         DCR A

         STA 4800

     Back: RST 1

     What value is stored in the location 4800 after executing the above program
     and justify your answer.

2.   Explain the SPHL, PCHL instruction.

3.   What are the differences between 8085 and 8086 processor?

4.   Give the operation of CBW and TEST instructions of 8086?

5.   In what ways are the standard microprocessor and co-processor differ from
     each other?

6.   How does the main processor distinguish its instructions from those for the
     8087 as it fetches instructions from memory?

7. What are the requirements to be met while interfacing memory or I/O devices to 8085 processor?

8. What are the modes of operation of 8237?

9. Compare a micro processor and micro controller.

10. Give the characteristics of the inbuilt memory in a 8051.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Write a program to find the average of ten numbers. (8)

    (ii) Describe the addressing modes of 8085. (8)

Or

    (b) (i) Discuss the functional block diagram of 8085. (12)

    (ii) Write a program to divide two eight bit numbers. (4)

12. (a) Explain the different addressing modes of 8086 Microprocessor.

Or

    (b) (i) Write an 8086 assembly language program to get an input from the keyboard for 2 digit and convert that input into a binary number using BIOS int. (8)

    (ii) Write an 8086 assembly language program to add 2 digit number by getting an input from the keyboard using BIOS interrupt call. (8)

13. (a) What is the different multiprocessor configuration supported by the8086 processor? Compare them,. Explain any one configuration in detail. (16)

Or

    (b) Draw the internal architectural diagram of 8089 IOP and explain how it functions as a intelligent DMA controller with the 8086 CPU. (16)

14. (a) (i) Bring about the features of 8251. (6)

    (ii) Discuss how 8251 is used for serial data communication. (6)

    (iii) Explain the advantages of using the USART chips in microprocessor based systems. (4)

Or

    (b) List the major components of 8279 keyboard display Interface and explain their functions. (16)

15. (a) (i) Explain the internal data memory structure of 8051 microcontroller with its SFRs. (8)

     (ii) What is timer/counter? Explain the 16-bit timer mode and 8-bit auto-reload mode of 8051 microcontroller. (8)

Or

    (b) (i) How to interface and display an LCD with microcontroller? (8)

     (ii) How to transfer data between a PC and microcontroller using serial communication? Draw the necessary diagrams and explain. (8)

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