Reg. No. : [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Question Paper Code : 71380

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2015.

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)

(Regulation 2008/2010)

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

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.

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        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. Write any two advantages of segment registers.

4. What are the significances of Bus High Enable signal?

5. Justify the need for coprocessor.

6. Justify — Coprocessor can fetch and execute the instructions.

7. What are the advantages of Programmable Interval Timer/Counter IC?

8. Define 'N-Key Roll over mode'.

9. What are the differences between a microprocessor and microcontroller?

10. What are the uses of Port 0 and Port 2 of 8051?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the internal architecture of Intel 8085 Microprocessor.

Or

(b) (i) Write an 8085 Assembly language program to convert a Digit BCD number into a Hexa decimal number. (8)

(ii) Write an 8085 Assembly language program to add two 32 bit BCD Number. (8)

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) (i) Explain different registers of 8087 CoProcessor. (8)

(ii) Explain the architecture of 8089 I/O Processor. (8)

Or

(b) Explain the loosely coupled configuration with suitable diagram. (16)

14. (a) (i) Explain the mode 1 operation of 8255 Programmable Peripheral Interface. (8)

(ii) Explain the different modes of operation of a timer. (8)

Or

(b) Explain the basic working principle of a stepper motor and write an assembly language program interface the stepper motor to the microprocessor. (16)

15. (a) Explain the internal architecture of 8051 Microcontroller. (16)

Or

(b) (i) Vin = 2.78v, Vref = 5v Number of data lines are 6. Convert the given analog quantity into its equivalent output digital quantity. (8)

(ii) Explain the different techniques to convert a digital quantity into its equivalent analog quantity. (8)
