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

Question Paper Code: 44423

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Fourth Semester

Computer Science and Engineering

14UEC423 - MICROPROCESSORS AND MICROCONTROLLERS

(Common to Information Technology)

(Regulation 2014)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. When a *CALL* instruction is executed, the stack pointer register is

    (a) Decremented by two   (b) Incremented by two
    (c) Decremented by one   (d) Incremented by one

2. Vector address of interrupt RST 7.5 is

    (a) 0.002CH   (b) 0.002CH   (c) 0.003CH   (d) None of these

3. In 8086 each segment register contains _____Kbytes of memory.

    (a) 8   (b) 16   (c)32   (d) 64

4. Which of the following instruction is a logical instruction?

    (a) DIV AB   (b) TEST   (c) CALL   (d) AAM

5. The 8087 coprocessor operate in _____with an 8086 processor and with the same instruction_____

    (a) series, byte   (b) parallel, byte
    (c) series, bits   (d) parallel, bits

6. The synchronization between processor and coprocessor can be done by _____ connection and the _____ instruction.

   (a) RQ/GT$_0$ and RQ/GT$_1$, FWAIT (b) INT and NMI, WAIT
   (c) BUSY and TEST, FWAIT (d) S$_0$ and QS$_0$, WAIT

7. In 8279, the keyboard entries are debounced and stored in an_____ that is further accessed by the CPU to read the key codes.

   (a) 8 -bit FIFO (b) 8 - byte FIFO
   (c) 16 byte FIFO (d) 16 bit FIFO

8. The 8279 is a

   (a) DMA controller (b) programmable keyboard display interface
   (c) counter (d) interrupt controller

9. The 8051 has _____ 16-bit Timer/Counter registers.

   (a) 5 (b) 4 (c) 3 (d) 2

10. What will be the output after execution of the following instruction?
    MOV A, #55
    ANL A, #67

    (a) 54 (b) 45 (c) 55 (d) 67

PART - B (5 x 2 = 10 Marks)

11. Compare single byte, two byte and three byte instructions.

12. List the various segment registers in 8086.

13. Compare closely coupled and loosely coupled configurations of co-processor.

14. Highlight the method used to transfer large blocks of data between external device and memory at high speed.

15. Draw the format of PSW of 8051.

PART - C (5 x 16 = 80 Marks)

16. (a) Describe the Architecture of 8085 with neat explanation. (16)

Or

(b) Write an ALP to convert binary to decimal number using 8085. (16)

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17. (a) Explain the addressing modes of 8086 with examples. (16)

Or

(b) Explain in detail about Interrupt Service Routine (ISR) of 8086 processor. (16)

18. (a) List the various types of coprocessor configurations? Explain them in detail. (16)

Or

(b) Explain the architecture of 8089 I/O processor with a diagram. (16)

19. (a) Show the function of keyboard and display controller with a neat sketch. (16)

Or

(b) Apply 8085 microprocessor for interfacing stepper motor control system and write an assembly language program for speed control. (16)

20. (a) Draw the architecture of 8051 microcontroller and explain each block. (16)

Or

(b) Explain the interfacing of ADC and DAC with 8051 microcontroller. (16)

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