Reg. No. :

Question Paper Code: 45045

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Fifth Semester

Electronics and Communication Engineering

14UEC505 - MICROPROCESSORS, MICROCONTROLLERS AND APPLICATIONS

(Regulation 2014)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The register in the 8085A that is used to keep track of the memory address of the next opcode to be run in the program is the

    (a) Stack pointer   (b) program counter
    (c) Instruction pointer   (d) Accumulator

2. What is SIM?

    (a) Select Interrupt Mask   (b) Sorting Interrupt Mask
    (c) Set Interrupt Mask   (d) Simple Interrupt Mask

3. Which microprocessor has multiplexed data and address lines?

    (a) 8086   (b) 8085
    (c) 8051   (d) Pentium

4. NMI stands for

    (a) Nonmaskable interrupt   (b) Nonmultiple interrupt
    (c) Nonmovable interrupt   (d) None of these

5. In cascaded mode, the number of vectored interrupts provided by 8259A is

    (a) 4   (b) 8   (c) 16   (d) 64

6. When a key is pressed, a debounce logic comes into operation in

    (a) scanned keyboard special error mode
    (b) scanned keyboard with N-key rollover
    (c) scanned keyboard mode with 2 key lockout
    (d) sensor matrix mode

7. The internal RAM memory of the 8051 is

    (a) 32 bytes   (b) 64 bytes   (c) 128 bytes   (d) 264 bytes

8. When 8051 wakes up then 0x00 is loaded to which register?

    (a) DPTR   (b) Stack pointer
    (c) PC   (d) PSW

9. Resolution of ADC is defined as

    (a) $1/(2N-1)$ (b) $1/(2^N-1)$ (c) 2^N-1 (d) $2N-1$

10. How many 16 bit registers are available in 8051?

    (a) 1   (b) 2   (c) 3   (d) none of these

PART - B (5 x 2 = 10 Marks)

11. Draw the contents of the flag register of 8085.

12. What are the different flag available in status register of 8086?

13. Draw the block diagram of Programmable Interrupt Controller (8259).

14. How do you select the register banks of 8051?

15. Give an application for Sensor based 8051 Microcontroller.

PART - C (5 x 16 = 80 Marks)

16. (a) Discuss briefly the various types of interrupts and explain the interrupt structure of in 8085 microprocessor. (16)

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(b) Write an assembly language program for Sorting of Numbers in ascending order using 8085. (16)

17. (a) With neat diagram explain the minimum mode operation of 8086. Also explain its operation with timing diagrams. (16)

Or

(b) Discuss in detail the various types of addressing modes of 8086 microprocessor with examples. (16)

18. (a) Discuss briefly about keyboard/display controller. (16)

Or

(b) With the help of a neat diagram explain DMA Controller. (16)

19. (a) Brief about 8051 Microcontroller ports in detail. (16)

Or

(b) Explain the architecture of 8051 with its diagram. (16)

20. (a) Develop a microcontroller based traffic light controller and explain its working. (16)

Or

(b) Explain how intelligent LCD displays can be interfaced with 8051 Microcontroller? Write an assembly language program for the same. (16)

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