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

Question Paper Code: 45405

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

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. What does microprocessor speed depends on

    (a) Clock   (b) Data bus width
    (c) Address bus width   (d) Data Address bus with

2. What is SIM?

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

3. Which bus is bidirectional?

    (a) Address bus   (b) Control bus
    (c) Data bus   (d) None of these

4. Which microprocessor has multiplexed data and address lines?

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

5. Which group of instructions does not affect the flags?

    (a) Arithmetic operations   (b) Logic operations
    (c) Data transfer operations   (d)Branch operations

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. Which of the following is an 8-bit register?

    (a) PSW(Program Status Word)   (b) TCON(Timer Control Register)
    (c) Accumulator   (d) All the above

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

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

9. If we push data onto the stack then the stack point

    (a) increases with every push   (b) decreases with every push
    (c) none of the above   (d) increases with only push

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. What is the need for ALE signal in 8085 microprocessor?

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

13. List the six modes of timer.

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

15. What is the necessity to interface DAC with microcontroller?

PART - C (5 x 16 = 80 Marks)

16. (a) Explain in detail about internal architecture of 8085 microprocessor with diagram.

    (16)

Or

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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) (i) Discuss the various Addressing Modes of 8086. (8)

(ii) List out the different types of Instruction used in 8086. (8)

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

Or

(b) Draw the architectural block diagram of a DMA controller and explain its operation. (16)

19. (a) Discuss 8051 Microcontroller Hardware Architecture with a neat diagram. (16)

Or

(b) (i) Explain the on-chip serial port structure of 8051 microcontroller with its SFRs. (8)

(ii) Write an assembly language program to generate a square wave using on chip timer in 8051 microcontroller. (8)

20. (a) Describe the Analog to Digital Conversion (ADC) Interfacing with 8051. (16)

Or

(b) With a neat circuit diagram explain how a 4 x 4 keypad is interfaced with 8051 microcontroller and write 8051 ALP for keypad scanning. (16)

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