A

Question Paper Code: 95303

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2023

Fifth Semester

Electrical and Electronics Engineering

19UEE503 - MICROPROCESSORS AND MICROCONTROLLER PROGRAMMING

(Regulation 2019)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Which of the following is the non-vectored interrupt?   CO1- R

   (a) INTR   (b)TRAP.   (c)RST6.5.   (d)RST6.6.

2. What is the formula to calculate the (kV)B on the LT section?   CO1- R

   (a) INTR   (b)TRAP.   (c)RST6.5.   (d)RST6.6.

3. LXI H,d16 specifies _____ addressing mode   CO2- R

   (a) Register   (b)Immediate   (c)Indirect   (d) Implicit

4. What is the required baud rate for an efficient operation of serial port   CO2- R
   devices in 8051   microcontroller?

   (a) 1200   (b)2400   (c)4800   (d) 9600

5. The 8051 has _____ parallel I/O ports.   CO3- R

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

6. On power up, the 8051 uses which RAM locations for register R0- R7   CO3- R

   (a) 00-2F   (b)00-07   (c)00-7F   (d) 00-0F

7. Which of the following is the most commonly used buffer in the serial   CO4- R
   porting?

   (a) LIFO   (b)FIFO   (c)FILO   (d) LILO

8. How much time period is necessary for the slave to receive the interrupt and transfer the data? CO4- R

    (a) 4 clock time period   (b) 8 clock time period

    (c) 16 clock time period   (d) 24 clock time period

9. What is the capability of ARM7 f instruction for second? CO5- R

    (a) 110 MIPS   (b) 150 MIPS   (c) 125 MIPS   (d) 130 MIPS

10. What is the capability of ARM7 f instruction for second? CO5- R

    (a) 110 MIPS   (b) 150 MIPS   (c) 125 MIPS   (d) 130 MIPS

PART – B (5 x 2= 10 Marks)

11. What is flag register in 8085 microprocessor? CO1-R

12. Define microcontroller and write any two real time applications of microcontroller. CO2-U

13. List the Interrupts in 8051 Microcontroller CO3-R

14. What is interrupt service Mechanism? CO4-U

15. What is RISC? CO5-U

PART – C (5 x 16= 80Marks)

16. (a) With neat functional block diagram, explain the architecture of 8085. CO1-App (16)

    Or

    (b) Illustrate the pin outs of 8085with neat sketch. CO1- U (16)

17. (a) Write a assembly program to multiply two 16-bit numbers for 8051 controller. CO2- U (16)

    Or

    (b) Explain different Addressing Modes of 8051 Microcontroller with examples. CO2- U (16)

18. (a) Draw the schematic for interfacing a stepper motor with 8051 microcontroller and write 8051 ALP for changing speed and direction of motor CO3- U (16)

    Or

    (b) Discuss the internal memory organization of 8051 microcontroller CO3- U (16)

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19. (a) Briefly Explain about Various types and uses of RAM and ROM for designing embedded systems   CO4- U   (16)

Or

(b) Discuss in detail about design issues in Embedded System   CO4- U   (16)

20. (a) Consider a case study in which the analog data is acquired from a temperature sensor. Then the date in converted into digital using ADC and the value is displayed on an LCD through the microcontroller. Draw circuit diagram from this application and explain its working with help of flow-chart   CO5- E   (16)

Or

(b) Explain various operating models of ARM, what is coprocessor? and how it works. Explain the working of MPU and MMU related memory   CO5- U   (16)

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