A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 55303

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

Fifth Semester

Electrical and Electronics Engineering

15UEE503- Microprocessors and Microcontroller Programming

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer All Questions

PART A - (10 x 1 = 10 Marks)

1. When an 8085 microprocessor is reset, the address bus contains CO1-R

   (a) 0000H (b) 0002H (c) 0043H (d) 003C H

2. The 8085 microprocessor uses a crystal of frequency 6.25 Mhz. The T-state value is CO1-R

   (a) 320 ns (b) 640 ns (c) 960 (d) 1280 ns

3. _____used to implement the hardware interrupts (RST 7.5, RST 6.5, RST 5.5) by setting various bits to form masks or generate output data via the Serial Output Data (SOD) line. CO2-R

   (a) SIM (b) RIM (c) EI (d) DI

4. Call instruction is a _____ instruction CO2-R

   (a) 3 byte (b) 2 byte (c) 4 byte (d)1 byte

5. The registers that contain the status information is CO3-R

   (a) Control registers (b) Status registers

   (c) Program status word (d) All of the mentioned

6. The device that generates the basic timing clock signal for the operation of the circuit using crystal oscillator is CO3-R

   (a) Timing unit (b) Timing and control unit

   (c) Oscillator (d) Clock generator

7. In direct memory access mode, the data transfer takes place CO4-R

(a) Directly (b) Indirectly

(c) Directly and indirectly (d) None of the above

8. The flag that increments automatically after each read or write operation to the display RAM is CO4-R

(a) IF (b) RF (c) AI (d) WD

9. Among the four groups of 8051 register banks, the number of groups that can be accessed at a time is CO5-R

(a) 1 (b) 2 (c) 3 (d) all of the four

10. The operations performed by data transfer instructions are on CO5-R

(a) bit data (b) byte data (c) 16 bit data (d) all of the above

PART – B (5 x 2= 10 Marks)

11. List out the various steps involved to fetch a byte in 8085? CO1- R

12. Explain the difference between a JMP instruction and CALL instruction. CO2- R

13. List the features of 8051 microcontroller. CO3- R

14. What is an USART? CO4- R

15. Write a program to find 2's complement using 8051. CO5- R

PART – C (5 x 16= 80Marks)

16. (a) Explain the architecture of 8085 microprocessor with functional block diagram. CO1-U (16)

Or

(b) Sketch the Timing diagram of 8085processor for MOV A,B instruction. CO1-U (16)

17. (a) With an example explain data transfer and logical & bit manipulation instructions of 8085 microprocessor. CO2-Ana (16)

Or

(b) Write an algorithm and assembly language program to add hexadecimal numbers stored in continuous memory or in an array using 8085 microprocessor. CO2- C (16)

18.	(a)	Explain in detail about the memory organization of 8051 microcontroller.	CO3- Ana	(16)
		Or		
	(b)	Explain the interrupt structure of 8051 microcontroller and also explain how interrupts are prioritized.	CO3- Ana	(16)
19.	(a)	(i) With a neat block diagram explain the function of 8255 PPI .	CO4-U	(12)
		(ii) Show the control word format of 8255 and explain how each bit is programmed.	CO4-U	(4)
		Or		
	(b)	Explain how to interface Digital to Analog converter with 8085 microprocessor and write an assembly programme to convert the given digital data into its equivalent analog data.	CO4-Ana	(16)
20.	(a)	Draw the schematic for interfacing a stepper motor with 8051 microcontroller and write 8051 ALP for changing speed and direction of motor.	CO5-U	(16)
		Or		
	(b)	With a neat circuit diagram explain how a 4 x 4 keypad and seven segment display is interfaced with 8051 microcontroller.	CO5-U	(16)

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