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

**Question Paper Code: 55303**

B.E./B.Tech. DEGREE EXAMINATION, NOV 2019

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. A microprocessor is a _____ chip integrating all the functions of a CPU of a computer. CO1- R

   (a) Multiple (b) Single (c) Double (d) Triple

3. In 8085 microprocessor, the RST6 instruction transfer programme execution to following location CO2- R

   (a) 0030H (b) 0024H (c) 0048H (d) 0060H

4. Why do the microprocessors possess very few bit manipulating instructions? CO2- R

   (a) Because they mostly operate on bits/ word data

   (b) Because they mostly operate on byte/word data

   (c) Both a & b

   (d) None of the above

5. The registers that contain the status information is C O3- R

   (a) Control registers (b) Control registers

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

6. The internal RAM memory of the 8051 is CO3- R

(a) 32 bytes (b) 64 bytes (c) 128 bytes (d) 256 bytes

7. When the 8051 is reset and the $\overline{EA}$ line is HIGH, the program counter points to the first program instruction in the CO4- R

(a) Internal code memory (b) External code memory

(c) Internal data memory (d) External data memory

8. Which components are not found on chip in a microprocessor but may be found on chip in a microcontroller CO4- R

(a) EPROM,USART &PORTS (b) EPROM & PORTS

(c) SRAM &USART (d) SRAM,EPROM &PORTS

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 above

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. State any four pins of 8085 processor which are used to generate control and status signals. CO1- R

12. Explain the functioning of CMP instruction. CO2- R

13. How multiplication is performed in 8085 and 8051? CO3- R

14. Write down the control word of 8255 if port A is configured as input and port B is configured as output in mode 0. CO4- R

15. Specify the difference between MOV and MOVX instructions. CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) With the neat diagram explain the various functional building blocks of 8085 processor. CO1- U (16)

Or

(b) Define Vector address. List the various interrupts of 8085 processor and elucidate the use of interrupt service routine. CO1- U (16)

17. (a) Define addressing mode. Identify the addressing mode and number of bytes of the following instructions and Discuss them CO2- C (16)

(i) LDA 8300H
(ii) MOV A,B
(iii) MVI B,FFH
(iv) MOV B,M
(v) IN 80H
(vi) CMA

Or

(b) Draw the flowchart and write an assembly language program to sort 100 bytes of data using 8085 processor. CO2- C (16)

18. (a) Draw and explain the pin out configuration of 8051 microcontroller. CO3- U (16)

Or

(b) Explain the interrupt structure of 8051 microcontroller and also explain how interrupts are prioritized. CO3- U (16)

19. (a) Draw the functional diagram of 8255 and explain its control word and various modes of operation. CO4- U (16)

Or

(b) Explain the interfacing of DAC with 8085 processor with neat diagram and write an assembly programme to generate a typical waveform. CO4- U (16)

20. (a) Draw the schematic for interfacing a stepper motor with 8051 microcontroller and write an 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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