A
Reg. No. :

Question Paper Code: 54B05

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

Fifth Semester

Biomedical Engineering

15UBM501 -MICROPROCESSOR AND MICROCONTROLLER

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Which one of the flag is not available in 8085 microprocessor?   CO1- R

    (a) Sign flag   (b) Trap flag   (c) Parity flag   (d) Zero flag

2. The addressing mode in instruction CMP M is   CO1- R
    (a) Direct   (b) Register   (c) Indirect   (d) Implied

3. Which one of the following is not a maskable interrupt?   CO2- R

    (a) TRAP   (b) RST 6.5   (c) RST 7.5   (d) INTR

4. Which one of the following is not a one byte instruction set of   CO2- R
    8085?
    (a) CMP M   (b) CMA   (c) MOV A,M   (d) MVI A,08H

5. 8051 series has how many 16 bit registers?   CO3- R
    (a) 2   (b) 3   (c) 1   (d) 4

6. What are the status of the carry, auxiliary carry and parity flag   CO3- R
    affected if the write instruction
    MOVA,#9C
    ADD A,#64H

    (a) CY=0,AC=0,P=0   (b) Y=1,AC=1,P=0   (c) CY=0,AC=1,P=0   (d) CY=1,AC=1,P=1

7.   The 8051 can have two _____ timers.   CO4-R

    (a) 4 bit   (b) 16 bit   (c) 8 bit   (d) 32 bit

8. The following 8051 port is not having multi-functionalities   CO4- R

   (a) Port 0   (b) Port 1   (c) Port 2   (d) Port 3

9. Consider the following I) Decode II) Execute III) Fetch   CO5- R
   Which one is order of 3-stage ARM pipeline process?

   (a) I,II,III   (b) II,III,I   (c) III,I,II   (d) III,II,I

10. Working Register is also called as   CO5- R

   (a) Status Register   (b) A Register   (c) PCL register   (d) PC

PART – B (5 x 2= 10Marks)

11. Define the function of parity flag and zero flag in 8085?   CO1- R

12. Classify the different interrupts available in 8086 with an example.   CO2- U

13. Name the special functions registers available in 8051.   CO3- R

14. What is Key-bouncing?   CO4- U

15. List the different types of PIC microcontroller instructions sets.   CO5- R

PART – C (5 x 16= 80Marks)

16. (a) Explain the Memory and I/O read, write operation of 8085   CO1-U   (16)
        processor with timing diagram

                                Or

    (b) Illustrate the 8086 microprocessor with neat functional block   CO1-U   (16)
        diagram and explain them in detail.

17. (a) Discuss the Interrupts available in 8085 with an example.   CO2-U   (16)

                                Or

    (b) Write an 8085 assembly language program to sort an array of data   CO2-App   (16)
        with an example.

18. (a) Explain the architecture of 8051 microcontroller and also explain   CO3- U   (16)
        the I/O Pins & Ports.

                                Or

    (b) Write an 8051 assembly language program to perform any two   CO3-App   (16)
        arithmetic operations on two 8 bit data.

54B05

19. (a) Draw the circuit diagram to interface an LCD display with 8051   CO4- U   (16)
microcontroller and explain how to display a character using
LCD display.

<div align="center">Or</div>

(b) Write 8051 ALP to generate pulses to derive and for continuous   CO4- Ana   (16)
operation of a stepper motor.

20. (a) Explain the architecture of ARM Processor with 3-stage   CO5- U   (16)
pipelining process with neat diagram.

<div align="center">Or</div>

(b) (i) Using suitable example, explain the various addressing modes   CO5- U   (8)
of PIC microcontroller.

(ii)Using suitable example, explain the various instruction sets of   (8)
PIC microcontroller.

54B05

54B05