Reg. No. :

Question Paper Code : X60455

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020

Fifth Semester

Electronics and Instrumentation Engineering

EC 2312/10133 EE 503/EE 2354/10133 EC 506/EE 64 – MICROPROCESSORS AND MICROCONTROLLERS

(Common to Instrumentation and Control Engineering, Electrical and Electronics Engineering)

(Regulations 2008/2010)

(Also Common to PTEE 2354/PTEC 2312/10133 EE 503 – Microprocessors and Microcontroller for B.E. (Part-Time) Fourth Semester – Electrical and Electronics Engineering – Regulations 2009/2010)

Time : Three Hours   Maximum : 100 Marks

Answer ALL questions

PART – A   **(10×2=20 Marks)**

1. Specify the processor size of 8085 and 8086 microprocessors.

2. State the function of TF and DF flags in 8086 microprocessor.

3. Find the addressing mode of the instruction.
   a) MOV A, M   b) RAR.

4. Write a program to set auxiliary flag and sign flag of a status register.

5. Draw the 3-bit Digital to Analog converter block and plot its analog output.

6. Draw the mode word format of 8251 USART.

7. What is instruction pipelining ?

8. What is the purpose of overflow flag in 8051 microcontroller ?

9. How pulse is generated using 8051 microcontroller ?

10. What are the control signals from 8051 microcontroller required for washing machine control ?

11. a) i) Explain the architecture of 8085 microprocessor with neat diagram. **(8)**

     ii) Show the memory and I/O interfacing with 8085 microprocessor and explain how the data is transferred with the peripherals. **(8)**

(OR)

  b) i) Describe the function 8086 microprocessor signals. **(8)**

     ii) Discuss about the interrupt structure of both 8085 and 8086 microprocessors. **(8)**

12. a) i) Describe the 8085 Assembly Language Program for the Loop structure with counting of 10 numbers. **(10)**

     ii) Describe the different addressing modes of 8085 microprocessor. **(6)**

(OR)

  b) i) Write an assembly language program using 8085 instructions to find the biggest number in a block of data stored in the memory locations from 70H-7FH. **(10)**

     ii) Write short notes on Look up table and its usage. **(6)**

13. a) Describe in detail about the working of 8279.

(OR)

  b) Discuss the different modes of operation of a 8253 timer.

14. a) i) Draw the data memory structure of 8051 microcontroller and explain. **(8)**

     ii) Write an 8051 assembly language program to copy the value 55h into RAM memory locations 40h to 45h using register indirect addressing with a loop. **(8)**

(OR)

  b) i) Assuming the clock pulse are fed into pin T_1. Write a program for counter 1 in mode 2 to count the pulses and display the state of the TL1 count on P2. **(8)**

     ii) Explain the interrupt structure of 8051 microcontroller. **(8)**

15. a) Write an 8051 C program that continuously gets a single bit of data from P1.7 and sends it to P1.0, while simultaneously creating a square wave of 200 us period on pin P2.5. Use timer 0 to create the square wave. Assume that XTAL = 11.0592 MHz. **(16)**

(OR)

  b) A switch is connected to pin P2.7. Write a ALP to monitor the status of SW and perform the following :
    i) If SW = 0, the stepper motor moves clockwise.
    ii) If SW = 1, the stepper motor moves counter clockwise. **(16)**

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