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Question Paper Code : X 67561

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020
Fifth/Sixth Semester

Electrical and Electronics Engineering

EC 1301 – MICROPROCESSORS AND MICROCONTROLLERS

(Common to Electronics and Instrumentation Engineering, Instrumentation and
Control Engineering and Electronics and Communication Engineering)
(Regulations 2008)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. What is the need for ALE signal in 8085 microprocessor ?
2. What is masking and why it is needed ?
3. Write a note on GPIB.
4. Calculate the count for the timer to obtain the square wave of the 200 microseconds period if the clock frequency is 3 MHz.
5. What does the instruction MOV CS: [BX], DL mean ?
6. Give the difference between near and far jumps.
7. State the function of 8051 microcontroller signals : $\overline{\text{PSEN}}$, $\overline{\text{EA}}$
8. What is the functions of 8051 registers DPTR, PC ?
9. Write a program to perform multiplication of two numbers using 8051.
10. What is subroutine ?

**PART – B****(5×16=80 Marks)**

11. a) i) Draw and explain the architecture of 8085. **(12)**
ii) Write a program to subtract two 16 bit numbers. **(4)**
(OR)
- b) i) Explain the addressing modes of 8085 with suitable examples. **(10)**
ii) Discuss the software delays using suitable examples. **(6)**
12. a) Write the features of 8251 USART. Explain how data can be transformed and received using 8251 USART at different baud rates. **(16)**
(OR)
- b) i) Show the interfacing of ADC to 8085 and explain the procedure to convert analog input to digital. **(8)**
ii) Describe the serial communication using I²C bus. **(8)**
13. a) i) Describe the shift instructions and rotate instructions in 8086 with an example. **(8)**
ii) Discuss the functions of the signals HLDA, RQ/GTO, DEN and ALE in 8086 processor. **(8)**
(OR)
- b) How the interrupt is handled by 8086 microprocessor ? Explain in detail. **(16)**
14. a) Explain the Timer/counter architecture of 8051 with examples. **(16)**
(OR)
- b) Explain in detail all the special function registers of 8051. **(16)**
15. a) i) Discuss the addressing modes supported by 8051. **(10)**
ii) Write an 8051 program to find the maximum number from a set of 8-bit numbers. **(6)**
(OR)
- b) i) Explain the interfacing of a stepper motor with 8051. **(10)**
ii) Discuss the I/O port programming in 8051. **(6)**
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