

B .E /B .Tech DE GRE E E XA MIN A TION ,MA Y /JU N E 2 012 .
SIXTH SE ME STE R
E LE CTRICA L A N D E LE CTRON ICS E N GIN E E RIN G
MICROPROCE SSOR A N D MICROCON TROLLE RS
(RE GU LA TION 2 008)

ANSWER ALL QUESTIONS

PART A-(10*2=20)

1. If the crystal oscillator frequency is 5M H Z , calculate the time period to execute the instruction STA4200 in 8085 processor..
2. what is the function of PCH L instruction?
3. State the function of DSR and DTR pins in 8251 ?
4. what are the different operating modes of 8253 timer?
5. what physical address is represented by 437 0H :567 1 H and 9A65H :0599H ?
6. Illustrate the operation of the following instructions in 8086 processor.
(a) DAA.
(B) CBW.
7. list the addressing modes of 8051 .
8. what is the function of PORT 3 In8051 microcontroller?
9. what is the resolution of 10 bit ASDC?
10. mention any two applications of stepper motor control.

PART A-(5*16=80 marks)

11. (a)(i) name and explain the different addressing modes used in 8085 with suitable examples.(8)
(ii) write an 8085 assembly language program to evaluate the expression $w=x^2+y^2+z^2$.(8)

(OR)

- (B)(i) Draw the timing diagram for the instruction IN82h of 8085 processor.(8)
(ii) explain the hardware interrupts of 8085 processor.(8)

12. (a) with neat functional block diagram , explain the features of 8255 program mable peripheral interface and its programming modes.(16)

(or)

- (b) design a circuit to interface 8251 USART with 8085 processor to handle serial data transfer operations.(16)

13. (a)(i) what are the flags available in 8086 processor? Explain their functions.(8)

(ii) explain the instructions supporting string operations in 8086 microprocessor.

write an ALP to move a block of data starting from memory location X to memory location starting from Y.(8)

(or)

- (b)(i) draw the pin diagram of 8086 CPU and explain the functions of the pins in minimum and

maximum mode of operation of 8086. (10)

(ii) describe the circuit suitable for generation of multiple wait states for 8086 CPU module. (6)

14. (a) explain the architecture of 8051 microcontroller with neat block diagram. (16)

(or)

(b)(i) draw the circuit to interface 8K RAM with 8051 externally. explain the circuit. (8)

(ii) explain the timer operation in 8051 microcontroller with necessary diagrams. (8)

15. (a) An industrial monitoring system requires monitoring nine different parameters and actuating three different tasks, three parameters per task. use interrupt structure. provide suitable input and output devices for accessing the system. design an 8051 microcontroller based system for this application and explain. (16)

Or

(b) draw the circuit to interface a DC motor to 8051 microcontroller. write an 8051 assembly language program to control the speed of the motor. explain the circuit and algorithm. (16)

