Question Paper Code : 41004

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018
Fifth Semester
Electrical and Electronics Engineering
EE6502 – MICROPROCESSORS AND MICROCONTROLLERS
(Common to Electronics and Instrumentation Engineering/Instrumentation
and Control Engineering/Manufacturing Engineering/Robotics and
Automation Engineering)
(Regulations 2013)

Time : Three Hours   Maximum : 100 Marks

Answer ALL questions

PART – A   (10×2=20 Marks)

1. List the features of accumulator.

2. Write the difference between standard I/O and memory mapped I/O.

3. List the classification of instruction based on its size.

4. Define stack.

5. Compare microprocessor and microcontroller.

6. How the microcontrollers respond to any interrupt request ?

7. How the DMA operations perform in microprocessor ?

8. Write the modes of operation in 8254.

9. What is use of data pointer register ?

10. What is the advantage of closed loop control system for interfacing ?

PART – B   (5×13=65 Marks)

11. a) Draw and explain the building blocks and its signal of 8085 processor.   (13)

(OR)

b) i) Describe the interrupts of 8085 and its types with service routine.   (7)

ii) Draw the timing diagram of MOV A, M instruction and explain each machine cycle.   (6)

12. a) i) Explain the types of addressing modes in 8085 with suitable example. (7)

ii) Write an 8085 program to find the greatest number among 10 numbers. (6)

(OR)

b) i) Explain the types of instruction in 8085 with example. (7)

ii) Write an 8085 program to find the average of 10 numbers and find the execution time of program. (6)

13. a) Draw and explain the architecture of 8051 microcontroller. (13)

(OR)

b) Briefly discuss the ports of 8051, internal circuits and its functions in detail. (13)

14. a) Draw the functional diagram of 8255 and explain its control word, modes of operation. (13)

(OR)

b) Draw the functional diagram of 8251 and explain its block in detail. (13)

15. a) Illustrate the keyboard and display interface with 8051 and write the program to get the input 45H from the external keyboard and display it on the external display device. (13)

(OR)

b) Interface the stepper motor with 8051 and explain its operation of stepper motor with neat diagram and program to rotate in clockwise direction. (13)

PART – C (1×15=15 Marks)

16. a) Design an 8085 based system with 512B RAM, 4KB ROM, external keyboard and seven segment display device. (15)

(OR)

b) Design a microcontrolled based system to control the water level in the tank. (15)

_____