Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 51446

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014.

Sixth Semester

Electrical and Electronics Engineering

EE 2354/EC 2312/EE 64/10133 EC 506/10133 EE 503 — MICROPROCESSORS AND MICROCONTROLLER

(Common to Fifth Semester Electronics and Instrumentation Engineering and Instrumentation and Control Engineering)

(Regulation 2008/2010)

(Common to PTEE 2354/PTEC 2312 – Microprocessors and Microcontroller for B.E. (Part-Time) Fourth Semester – Electrical and Electronics Engineering and Electronics and Instrumentation Engineering – Regulation 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. To obtain a 320 ns clock, what should be the input clock frequency? What is the frequency of clock signal at CLK OUT?
2. What is meant by level-triggered interrupt? Which of the interrupts in 8085 are level triggered?
3. Mention the similarity and difference between compare and subtract instructions.
4. State the purpose and importance of NOP instruction.
5. What are the salient features of INTEL 8259 programmable interrupt controller?
6. How data is transmitted in asynchronous serial communication?
7. Mention the purpose of $\overline{\text{PSEN}}$ and $\overline{\text{EA}}$ in 8051 microcontroller.
8. List the interrupt sources in 8051 microcontroller.
9. State the functions performed by JBC and CJNE instructions in 8051 microcontroller.
10. What is Program Status Word?

PART B — (5 × 16 = 80 marks)

11. (a) Explain how pipelined architecture is implemented in 8086.

Or

(b) Draw the signal configuration of 8085 and explain the purpose of each signals.

12. (a) (i) Describe the interrupt structure of 8085 microprocessor and compare the same with 8086 microprocessor. (10)

(ii) Write an 8085 Assembly Language Program to generate a time delay of 1ms. Show the calculations. (6)

Or

(b) Write a program to calculate and store in the results as mentioned. Five memory locations 2401H, 2402H, 2403H, 2404H and 2405H have data called X1, X2, X3, X4 and X5.

(2405H) = X1 + X2 + X3 + X4

(2403H) = X5 – X3 – X2 – X1.

13. (a) Draw the block diagram of 8255A programmable peripheral interface and explain each block.

Or

(b) Discuss the internal architecture of 8253 programmable interval timer.

14. (a) Explain the port operation in 8051 microcontroller.

Or

(b) Explain the different modes with which the timer/counter in 8051 microcontroller can be programmed.

15. (a) Explain the different operand addressing modes in 8051 microcontroller with examples.

Or

(b) Describe the control system design of washing machine.

———————