Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 23453

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Fifth Semester

Electronics and Communication Engineering

EC 2304 — MICROPROCESSORS AND MICROCONTROLLERS

(Regulations 2008)

(Common to PTEC 2304 – Microprocessors and Microcontrollers for B.E. (Part-Time)
Fifth Semester – Electronics and Communication Engineering – Regulations – 2009)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Why is 8284 clock generator connected to the 8086 CLK pin?

2. Differentiate between minimum mode and maximum mode operation of 8086 microprocessor.

3. What is an assembler?

4. What is virtual addressing mode?

5. State the importance of sample-and-hold circuit.

6. List the applications of Programmable Interval Timer.

7. How does the processor 8051 knows whether on-chip ROM or external program memory is used?

8. What is the difference between AJMP and LJMP instruction?

9. Why are relays that use coils called electromagnetic relays?

10. What is PWM?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Draw and explain minimum mode system configuration of 8086 microprocessor. (8)

    (ii) Briefly explain the architectural advancements of microprocessors. (8)

Or

    (b) With a neat diagram explain the bus interfacing unit and execution unit available in 8086 microprocessor. (16)

12. (a) (i) What do you mean by assembler directives? Explain SEGMENT, TYPE, OFFSET with suitable examples. (8)

    (ii) Write an 8086 ALP to check whether the given string is palindrome or not. (8)

Or

    (b) (i) Write an 8086 ALP to to separate odd and even numbers in a given array. (6)

    (ii) Explain the data transfer group and logical group of 8086 instructions with necessary examples. (10)

13. (a) With neat block diagram explain the 8255 Programmable Peripheral Interface and its operating modes. (16)

Or

    (b) Explain the 8279 Keyboard/Display controller with neat block diagram. (16)

14. (a) (i) Enumerate about the ports available in 8051 microcontroller. (8)

    (ii) Write an assembly language program for 8051 microcontroller to send 20 output pulses at P2.0. Vary the duration of pulse using NOP. (8)

Or

    (b) (i) Describe the serial interface with 8051 microcontroller. (8)

    (ii) Write an assembly language program for 8051 to find the largest of three numbers. (8)

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15. (a) (i) Draw and explain the block diagram of traffic light control system.
(10)

(ii) Briefly discuss the features of RTC device. (6)

Or

(b) Draw a diagram to interface a stepper motor with a 8051 microcontroller and explain. Also write an 8051 ALP to run the stepper motor in both forward and reverse direction with delay. (16)

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