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Question Paper Code : 91408

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Fifth Semester

Electronics and Communication Engineering

EC 2304/EC 54 — MICROPROCESSORS AND MICROCONTROLLERS

(Regulation 2008)

(Common to PTEC 2304 — Microprocessors and Micro Controllers for B.E (Part-Time) Fifth Semester Electronics and Communication Engineering Regulation 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. What is a Tristate bus?

2. What is direct memory access?

3. What is an assembler?

4. What is virtual addressing mode?

5. What is a sample and hold circuit?

6. What is key-debouncing?

7. List the SFRs involved in interrupt programming of 8051.

8. Why it is necessary to have external pull-up for port O in 8051.

9. What is PWM?

10. Give the schematic to interface a relay with microcontroller?

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) Briefly explain the addressing modes of 8086 with example. (16)

Or

(b) (i) Briefly explain the arithmetic group of instructions available in 8086 microprocessor. (8)

(ii) Briefly explain the assembler directives of 8086. (8)

13. (a) With a neat block diagram explain the key board and display controller IC 8279. (16)

Or

(b) (i) With a neat block diagram explain programmable interval IC 8253. (8)

(ii) Briefly explain the method of interfacing A-to-D converter with microcontroller. (8)

14. (a) Explain in detail the memory organization of 8051 microcontroller. (16)

Or

(b) (i) Briefly explain the data transfer instructions available in 8051 microcontroller. (8)

(ii) Using timers in 8051 write a program to generate square wave of 100 ms, 50% duty cycle. (8)

15. (a) (i) With a neat diagram explain washing machine control using microcontroller. (8)

(ii) With a diagram explain the DC motor control using 8051 microcontroller. (8)

Or

(b) (i) Explain stepper motor control using 8051 microcontroller. (8)

(ii) With a neat diagram explain the RTC interfacing using 12C standard. (8)

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