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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 × 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)