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

Question Paper Code : 51455

B.E/B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Fifth Semester

Electronics and Communication Engineering

EC 2304/EC 54 – MICROPROCESSORS AND MICROCONTROLLERS

(Regulations 2008)

(Common to PTEC 2304 – Microprocessors and Microcontrollers for BE (Part-Time) ECE – Fifth Semester – Regulations 2009)

Time : Three Hours **Maximum : 100 Marks**

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. When the 8086 processor is in minimum mode and maximum mode ?
2. Define Segment Override Prefix.
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. What happens in power down mode of 8051 microcontroller ?
8. How the selection of particular register bank is done in 8051 ?
9. Write about the design steps involved in using microcontroller for Stepper motor.
10. State the significance of using microprocessors in interfacing traffic limit control.

PART – B (5 × 16 = 80 Marks)

11. (a) (i) Explain the internal hardware architecture of 8086 microprocessor with neat diagram. **(12)**

(ii) Write briefly about the Direct Memory Access. **(4)**

OR

(b) (i) Explain the external memory addressing in 8086. **(8)**

(ii) Discuss the interrupts types of 8086 microprocessor. **(8)**

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 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) Explain the architecture of 8051 microcontroller with neat diagram. **(10)**

(ii) Explain the TMOD function register and its timer modes of operations. **(6)**

OR

(b) (i) Write a brief note on external data move operations in 8051. **(6)**

(ii) Write an 8051 assembly language program to add three BCD numbers stored in internal RAM locations 25 H, 26 H and 27 H and put the result in RAM locations 31 H (MSB) and 30 H (LSB). Use register R_0 to store the intermediate result. **(10)**

15. (a) (i) Draw a circuit schematic for washing machine control using 8051. **(8)**

(ii) Explain in detail about the RTC Interfacing using 12C Standard using microcontroller. **(8)**

OR

(b) With a complete example, explain the design of Traffic Light Controller using Microcontroller and Microprocessor. **(16)**
