



C14-EC-505

**4634**

**BOARD DIPLOMA EXAMINATION, (C-14)  
MARCH/APRIL—2017  
DECE—FIFTH SEMESTER EXAMINATION  
MICROCONTROLLER APPLICATIONS**

*Time : 3 hours ]*

*[ Total Marks : 80*

**PART—A**

3×10=30

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. What are the factors in selecting an ADC chip?
2. List the features of MAX1112 ADC chip.
3. Find the number of address lines required for the given memory chips for accessing the data :  
(a) 8 KB  
(b) 16 KB
4. List the types of semiconductor memories.
5. List the pins of LCD.
6. Draw an interfacing diagram to connect a matrix keyboard.
7. What is the importance of RTC chip?
8. List the features of the DS12887 chip.

9. What is the need of a solid-state relay?
10. Draw a block diagram of temperature controller.

**PART—B**

10×5=50

**Instructions :** (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Draw and explain the interfacing of temperature sensor LM35 to 8051. 10
12. Explain data memory space of 8051. Explain, with instructions, how the data is accessed from the data memory. 10
13. (a) Draw the pin diagram of serial EEPROM chip 24C02 and explain the function of each pin. 6  
(b) Draw the interfacing diagram of 24C02 with 8051. 4
14. Draw and explain the interfacing of push button switches and LEDs to 8051. 10
15. Write an assembly language program to communicate with LCD to display “WELCOME”. Assume P1 port of 8051 is connected to  $D_0$ - $D_7$  of LCD and P2.0 to RS, P2.1 to R/W and P2.2 to E. 10
16. Draw the pin diagram of DS12887 RTC chip and explain the function of each pin. 10
17. Explain each bit of register-A and register-B of DS12887 RTC chip with neat diagrams. 10
18. Draw and explain the interfacing of 8051 with a stepper motor. 10

\*\*\*