# 4634

## BOARD DIPLOMA EXAMINATION, (C-14)
## MARCH/APRIL-2019
## DECE - FIFTH SEMESTER EXAMINATION
MICROCONTROLLER APPLICATIONS

**Time: 3 Hours]** **[Max. Marks: 80**

### PART - A

**3x10=30M**

*Instructions:* 1) Answer **all** questions. Each question carries **three** marks.

2) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1) Explain the need of signal conditioning in data acquisition system.

2) Draw the pin out diagram of ADC0831 and list the features.

3) What do you mean by check sum byte of ROM?

4) Explain how the semiconductor memories are organized using memory capacity.

5) Explain about key debouncing.

6) List any six LCD command codes.

7) What is the use of RTC?

8) Explain the function of PF, PIE bits of DS12887 registers.

9) Explain the principle of speed control of DC motor using PWM circuit.

10) Explain the need of opto couplers in 8051 microcontroller interface circuits.

**5x10=50M**

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

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

3) The answer should be comprehensive and the criterion for valuation is the Content but not the length of the answer.

11) Draw the interfacing diagram of LM35 with microcontroller through ADC and explain its operation.

12) Draw the interfacing diagram of serial EEPROM 24C02 with 8051 microcontroller and explain the operation.

13) Draw the memory decoding circuit using 74138 decoder for interfacing of 16KB program ROM with 8051 microcontroller and explain how 8051 access them.

14) Draw an interfacing diagram of eight LEDs with p1 port of 8051 microcontroller and write an embedded C program for flashing of LED.

15) Explain the interfacing of LCD module with 8051 microcontroller.

16) Draw an interfacing diagram of DS12887 RTC with 8051 and explain the sequence of events to sending data to DS12887 and receiving data from DS12887.

17) Draw the pin out diagram of DS 12887 and give the address map of DS12887 RTC.

18) Draw an interfacing diagram of stepper motor with port 1 of 8051 microcontroller and write an assembly language program to rotate stepper motor for anticlockwise $360^0$ rotation continuously.

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