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C14-EC-505

4634

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH/APRIL—2021

DECE - FIFTH SEMESTER EXAMINATION

MICROCONTROLLER APPLICATIONS

Time : 3 hours]

[Total Marks : 80

PART—A

4×5=20

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

1. State the need of ADC chip in 8051 applications.
2. List any two features of an ADC chip.
3. List different semiconductor memories.
4. List the features of serial EEPROM chip 24C02.
5. Give a simple circuit of interfacing a push button switch to 8051 microcontroller.
6. List any three reasons for the popularity of LCDs.
7. State the need of RTC chip in 8051 applications.
8. State the use of different features of RTC Chip DS 12887.
9. State the need of opto-couplers in 8051 based applications.
10. Draw 8051 based interface circuit with relay to drive a lamp.

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PART—B

15×4=60

Instructions : (1) Answer *any four* questions.
(2) Each question carries **fifteen** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. Explain interfacing of serial ADC 0831 chip to 8051.
12. Explain the features of EPROM (parallel and serial).
13. Explain memory address decoding using IC 74138 (a 3×8 decoder).
14. Describe the seven segment display interface with 8051.
15. Explain key press and detection mechanisms.
16. Explain interfacing of DS12887 RTC chip with 8051.
17. Explain the interrupt and alarm features of RTC chip DS 12887.
18. Draw and explain a driver circuit required to run a stepper motor.

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