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BOARD DIPLOMA EXAMINATION, (C-14)

OCT/NOV—2016

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. List any three features of DAC 0800.
2. What is signal conditioning?
3. How many address lines do a 64K × 8 memory chip has?
4. What is checksum byte of ROM?
5. Write an 8051 ALP to blink an LED connected to P1.0.
6. List any three reasons for the popularity of LCDs.
7. What is real time clock (RTC)?
8. Write a short note on alarm feature of DS12887 RTC.
9. List the normal 4-step sequence for stepper motor.
10. Draw a diagram to interface relay at P1.0 of 8051 to drive a lamp.

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. 5+5
12. Draw and explain the interfacing of 8K × 8 external program ROM with 8051. 5+5
13. (a) Draw the pin diagram of serial EEPROM chip 24C02. Explain the function of each pin. 2+4
- (b) Draw the interfacing diagram of 24C02 with 8051. 4
14. (a) Explain the functions of RS, R/W and E pins of an LCD. 6
- (b) Draw the interfacing diagram of LCD with 8051 microcontroller. 4
15. Draw and explain the interfacing of a 4×4 matrix keyboard with 8051. 4+6
16. Explain the function of pins of DS12887 RTC. 10
17. (a) Draw the interfacing diagram of DS12887 RTC to 8051 microcontroller. 5
- (b) Write a C program to set the time to 16:55:30 in DS12887 RTC. 5
18. (a) Draw the interfacing diagram of stepper motor with 8051. 5
- (b) Write an 8051 assembly language program to run stepper motor continuously in clockwise direction. 5
