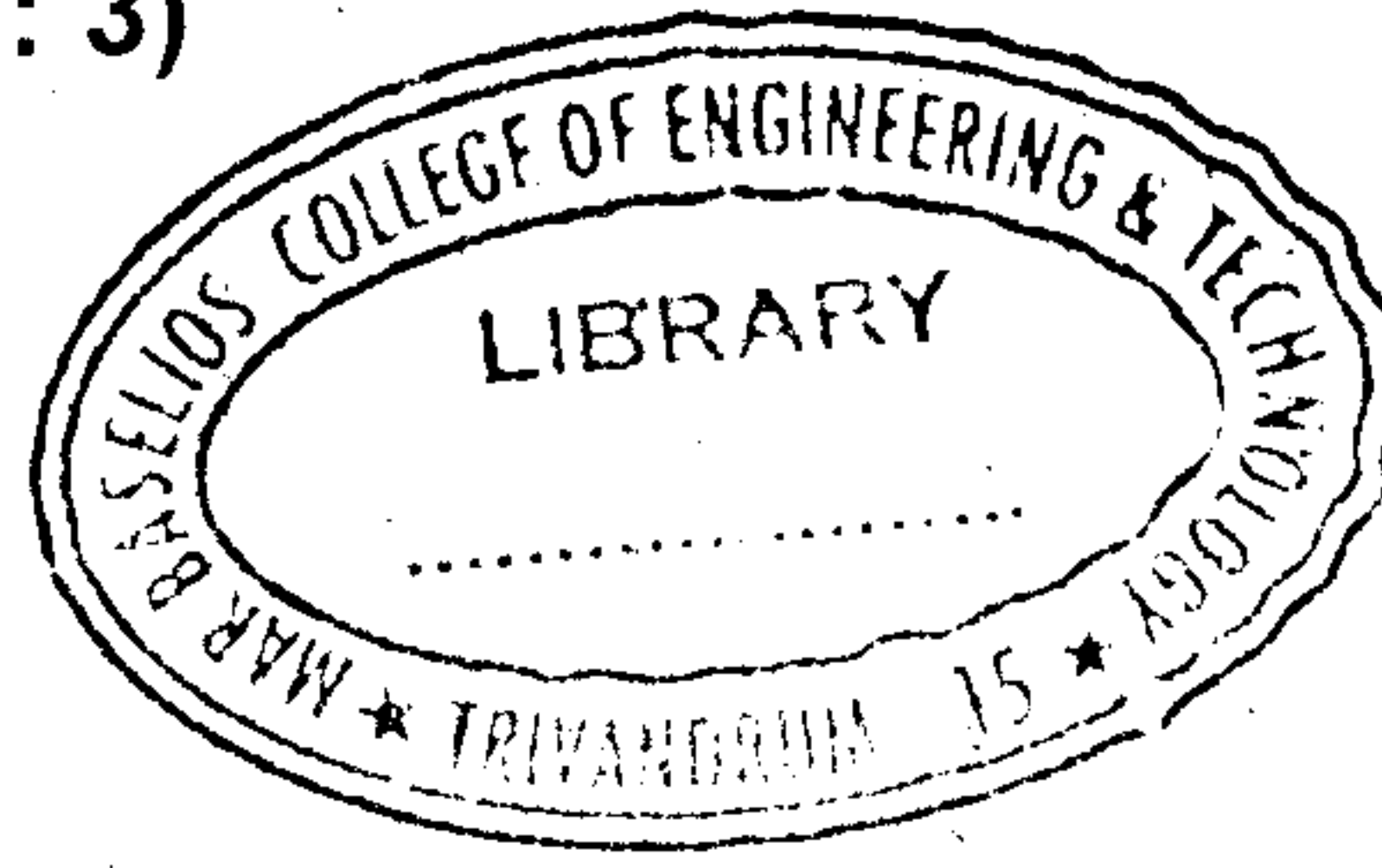


(Pages : 3)

G – 3365

Reg. No. :

Name :



Fourth Semester B.Tech. Degree Examination, June 2019
(2008 Scheme)

08.403 : MICROCONTROLLER- BASED DESIGN (F)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer all question:

1. What is a port latch? Give two instructions that use a port latch.
2. Write an 8051 ALP to check if a 8-bit number read in through port P3 is prime or not. If it is prime, send 'Y' through port P2. Else send 'N'.
3. Explain the CJNE instruction.
4. Write an 8051 C Program to find the perfect squares from the first n natural numbers and store them in RAM location starting from 31H. n is contained in 30H.
5. Describe the interrupt vector table of 8051.
6. What is MAX232? Describe the pins.
7. What is the importance of baud rate? How do you set the baud rate in 8051?
8. Explain the pins of DAC0808.
9. Write a short note on ARM Processors.
10. Calculate the number of step per revolution of a stepper motor for a step angle of 7.5 degrees.

(10 × 4 = 40 Marks)

P.T.O.

PART – B

Answer **one full** questions from **each** Module.

Module – I

11. (a) With a neat block diagram, explain the architecture of 8051. (8)
- (b) Write an 8051 ALP to find the sum of digits of a 16-bit number stored in memory location 35H and 36H. Send the result to P2. (12)

OR

12. (a) Explain with a diagram the memory organisation of 8051. (8)
- (b) Write an 8051 C Program to find the least common multiple of 5-bit numbers stored in RAM location starting from 50H. (12)

Module – II

13. (a) Explain with an example serial data transmission and reception. (10)
- (b) Write an 8051 ALP to set Timer 1 as an event counter. Use mode 2 and display the decimal count on P3, P2 and P1 continuously. (10)

OR

14. (a) Describe the modes of operation of the timer/counters in 8051. (10)
- (b) Write an 8051 ALP using interrupts to get data serially and send it to P1 while Timer 0 is generating a square wave of 2 kHz. (10)

Module – III

15. (a) Explain how an LCD display is interfaced to 8051. (10)
- (b) Write an 8051 ALP to send data and commands to LCD by checking the busy flag. (10)

OR

16. (a) Explain with a diagram the 8051's interfacing with ADC. (8)
- (b) The voltage levels required for generating a sine wave using DAC 0808 are stored in external RAM location from 7000H to 7180H. Write an 8051 ALP to generate a continuous sine wave. (12)

