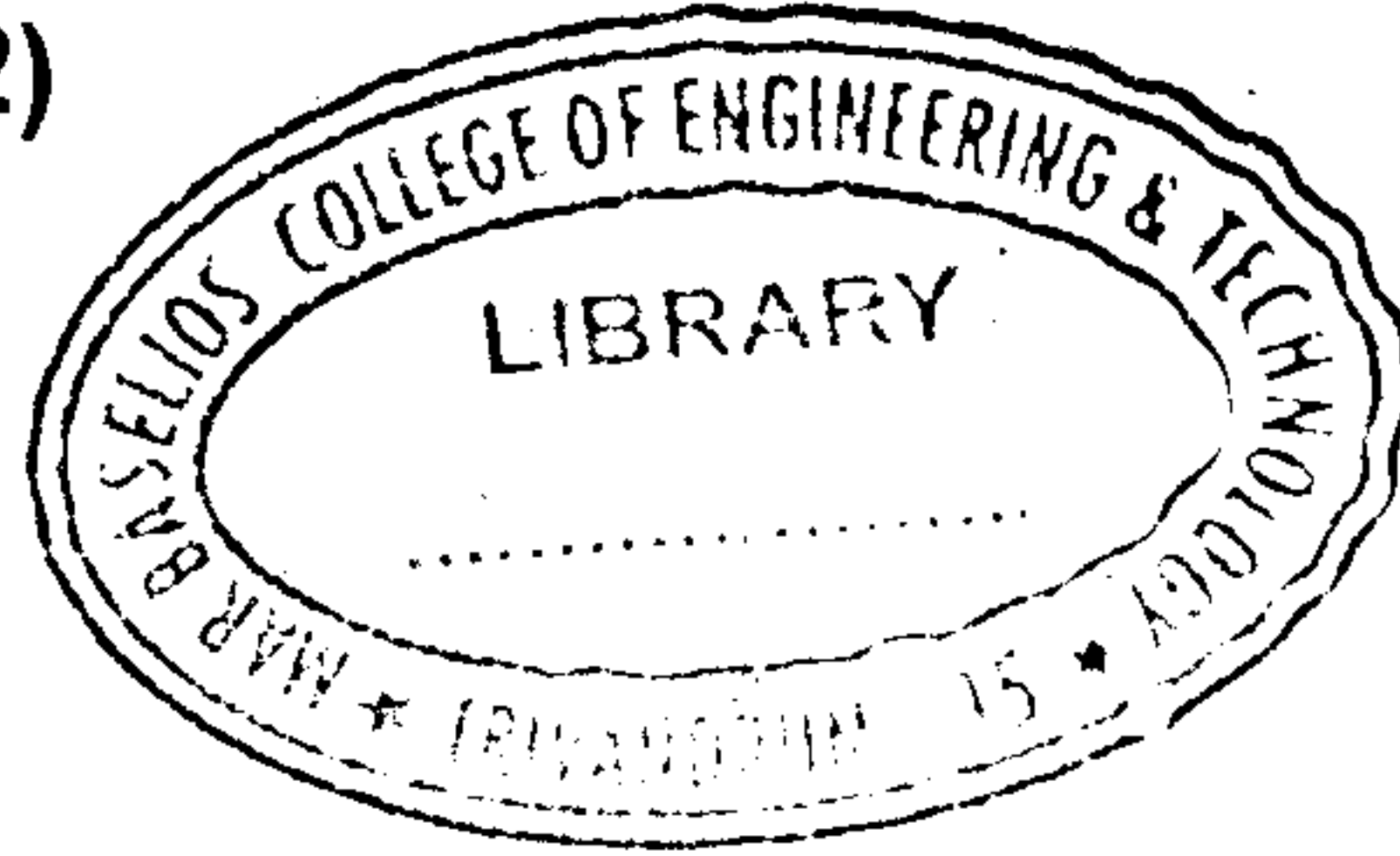


(Pages : 2)

G – 3361

Reg. No. : .....

Name : .....



**Fourth Semester B.Tech. Degree Examination, June 2019**

**(2008 Scheme)**

**08.403 : COMPUTER HARDWARE DESIGN (R)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** questions. Each carries 4 marks.

1. Give the flow chart for multiplication of two floating point numbers.
2. Differentiate between restoring and non restoring division. (Flowcharts not needed).
3. When do you say that an underflow has occurred during floating point subtraction?
4. Explain the design of a 4 bit shifter.
5. What do you mean by scratch pad memory? How can a processor be designed using that?
6. Design a logic circuit for OR, XOR, AND and NOT operations.
7. Briefly explain inter register transfer operations.
8. Write notes on microprogrammed control organisation.
9. What is the significance of a microprogram sequencer?
10. Write notes on nano memory and nano instructions.

**(10 × 4 = 40 Marks)**

P.T.O.

PART – B

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

**Module – I**

11. (a) Explain the algorithm for restoring division with proper examples. (12)  
(b) Design a  $3 \times 4$  array multiplier. (8)

OR

12. (a) Explain Booths Multiplication algorithm with examples. (10)  
(b) Write notes on BCD addition. (10)

**Module – II**

13. (a) With the help of a diagram explain the organisation of a processor along with all the control variables. (12)  
(b) Write notes on status register. (8)

OR

14. Briefly describe the design of a 4 bit ALU. (20)

**Module – III**

15. Explain hardwired control design with an example. (20)

OR

16. Explain design of a micro program sequencer. (20)

**(3 × 20 = 60 Marks)**

