

Con. 4988-06.

(REVISED COURSE)  
(3 Hours)

YM-6757

[Total Marks : 100

N. B. : (1) Question No. 1 is compulsory.

(2) Answer any **four** out of remaining **six** questions.

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|----|-----|--|----|
| 1. | (a) | Give the structural description of a full adder circuit that computes the 1-bit sum considering the previous carry ; $d = x + y + c_{-1}$ and also generates a carry signal. | 10 |
|    | (b) | Explain the restoring division method for signed numbers. Divide 145 by 13 in binary two's complement notation using 12-bit words using restoring division method.           | 10 |
| 2. | (a) | Explain the design aspects in implementation of pipelining. Hence draw and explain the four-stage floating point adder pipeline.   | 10 |
|    | (b) | Explain any two hard wired control unit design Techniques.   | 10 |
| 3. | (a) | Compare RISC and CISC computers.   | 10 |
|    | (b) | Explain the control unit design for gcd processors using state table method.   | 10 |
| 4. | (a) | Using 32 x 8' ROM chip with enable input, show the external connection to design 128 x 8 ROM.  | 10 |
|    | (b) | Explain the steps involved in design of ALU with example   | 10 |
| 5. | (a) | Explain the different mapping techniques used in the design of Cache Memory.   | 15 |
|    | (b) | Explain the working of SRAM.   | 5  |
| 6. | (a) | With the help of block diagram. Explain the working of DMA.  | 10 |
|    | (b) | Explain IOP and CPU interaction.   | 10 |
| 7. | (a) | Write a short note on MIMD.  | 10 |
|    | (b) | Explain the use of Guard bits and Rounding methods for floating point numbers.   | 10 |