

(3 Hours)

[Total Marks: 80]

Note : Q1 is compulsory.

Attempt any THREE out of the remaining questions.

Assume suitable data if necessary.



Q1. Attempt any 4 sub questions

- a) Explain six stage instruction pipeline with suitable diagram. 5
- b) Write a note on 8288 bus controller. 5
- c) Explain memory hierarchy. 5
- d) Draw the flowchart of unsigned binary restoring division algorithm. 5
- e) Explain any five instructions of 8086 microprocessor with suitable examples. 5
- Q2. a) What is DMA? Explain working of DMA. 10
- b) List and explain key characteristics of computer memory. 10
- Q3 a) Draw the flowchart of Booths algorithm and multiply  $(-3)*(4)$  using Booths algorithm. 10
- b) Explain micro-programmed control unit with suitable diagram. 10
- 4 a) Explain addressing modes of 8086 microprocessor with suitable examples. 10
- b) Explain single and double precision IEEE 754 binary floating point representation formats. 10
- Q5. a) Explain with suitable diagram maximum mode of operation of 8086 Micro processor. 10
- b) Write 8086 Assembly Language Program to count number of 0's and 1's in a given 8 bit number. 10
- Q6 Write notes on ( any two ) 20
- a) Cache memory mapping techniques.
- b) Flynn's classification of parallel computers.
- c) Programmed I/O.