

Time: 2 Hours

Marks : 60

Notes:

1. Question No. 1 is Compulsory.
2. Attempt any THREE from Q2. To Q6.
3. All questions carries equal mark.
4. Calculator having number conversion function is not allowed.

Q1 Attempt any THREE

- A Convert the following decimal number to Binary, Octal and Hexadecimal number. 5
 a) $(345.35)_{10}$ b) $(818.55)_{10}$
- B Explain addressing modes of 8086 with suitable example. 5
- C Explain Associative memory with its usages. 5
- D Explain ISA, PCI and USB buses. 5

- Q2 A Draw flowchart for non restoring division algorithm and implement for $(13/3)$ 8

- B Explain memory hierarchy with diagrams and characteristics of memory. 7

- Q3 A A computer has 64MB main memory and 32KB cache memory. Each line in cache stores 8bytes. 8

Show the format for memory address for Direct and Associative mapping.

- B Explain and compare programmed I/O, interrupt-driven I/O, and DMA. 7

- Q4 A Explain micro-programmed control unit with suitable diagram. 8

- B Draw and explain the various pipeline hazards and method to resolve it. 7

- Q5 A Explain with suitable diagram Architecture of 8086 microprocessor. 8

- B Multiply $(12)_{10}$ and $(-5)_{10}$ using Booth's algorithm. 7

- Q6 A Explain bus arbitration with examples 5

- B Explain Flynn's classification. 5

- C Differentiate horizontal and vertical microinstruction. 5