

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**