**Time : 2 Hours** **Marks : 60**

**Notes:**

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

**Q1 Attempt any THREE.**

| | | | |
|---|---|---|---|
| | A | Convert $(74.25)_{10}$ and $(47.50)_{10}$ into hexadecimal numbers and perform addition on converted numbers. | **5** |
| | B | Explain instruction pipeline. | **5** |
| | C | Explain characteristics of memory. | **5** |
| | D | Explain Associative memory. | **5** |
| **Q.2** | A | Convert $(56.45)_{10}$ into IEEE 754 floating point Single Precision format. | **8** |
| | B | Explain different pipeline hazards. | **7** |
| **Q.3** | A | Draw flow chart for nonrestoring division algorithm and solve $(15)_{10}$ / $(2)_{10}$. | **8** |
| | B | Explain programmed IO and interrupt-driven data transfer methods. | **7** |
| **Q.4** | A | Compare Direct, Associative, Set Associative Cache Mapping techniques. | **8** |
| | B | Compare Hardwired and Softwired control unit design techniques. | **7** |
| **Q.5** | A | Explain architecture of 8086 microprocessor. | **8** |
| | B | Multiply $(-8)_{10}$ and $(-3)_{10}$ using Booth's algorithm | **7** |
| **Q.6** | A | Explain Flynn's classification. | **8** |
| | B | Differentiate between different operation modes of 80386DX processor | **7** |

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