ice based / INST.

(3 Hours) [Total Marks: 80]

N.B. (1) Question **No. 1** is compulsory.
(2) Attempt any **Three** questions out of remaining **five** questions.
(3) Assume any suitable data if necessary.
(4) Figure to the right indicate full marks.

1. Attempt **any four**. **20**
   a) Describe instruction cycle state diagram.
   b) State Overflow and Subtraction rule with suitable example.
   c) Define Microinstruction and and its sequencing technique.
   d) State Temporal locality and Spatial locality.
   e) Explain flynn's Taxonomy.

2. a) Describe the block diagram of Unsigned Binary Multiplication with suitable example. **10**
   b) Describe the memory hierarchy. **10**

3. a) Describe IEEE 754 single format floating point representation. **10**
   b) Explain in brief the levels of RAID. **10**

4. a) Describe the effect of conditional branch on instruction pipeline operation using six stage instruction pipeline. **10**
   b) State the drawbacks of Programmed and Interrupt driven I/O. Explain a more efficient technique for the large data transfer implemented in computer. **10**

5. a) Classify Semiconductor RAM and ROM with respect to Type, Erasure, Write mechanism and volatility and explain in detail. **10**
   b) Describe the Fetch, Indirect and Interrupt micro operations in detail. **10**

6. a) Write short note on **10**
      1.Computer Architecture and Computer Organization.
      2. Pentium's Branch prediction
   b) Describe block diagram of Pentium and its Cache. **10**