



**T.E. (E &TC) (Semester – II) Examination, 2011
COMPUTER ORGANISATION AND ARCHITECTURE
(2008 Pattern) (New)**

Time : 3 Hours

Max. Marks : 100

SECTION – I

1. a) Explain the operation of sequential circuit binary multiplier with
Multiplicand 1101
Multiplier 1011. 8
- b) Using Booth's algorithm multiply
Multiplicand = - 13
Multiplier = + 11 8
- OR
2. a) Explain following addressing modes with example
1) Indirect mode
2) Index mode
3) Relative mode. 6
- b) Carry out bit pair recoding of following multipliers
1 1 0 1 0
0 1 1 0 1 4
- c) Represent (178.1875) in single precision floating point format. 6
3. a) Explain with neat block diagram single bus organisation. 9
- b) Using input output gating for the registers in single bus organisation explain operation of
1) Fetching a word from memory
2) Storing a word in memory. 9
- OR



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4. a) Draw neat block diagram of three bus organisation of data path inside the processor and hence explain the control sequence for instruction Add R4, R5, R6. **9**
- b) What is microprogrammed control ? Using single bus organisation write control sequence for execution of instruction Add (R3), R1. Write microinstructions for the same. **9**
5. a) Explain how multiple interrupt requests can be handled using
- 1) Vectored Interrupt
 - 2) Using individual interrupt request and acknowledge lines. **6**
- b) Explain use of PCI bus in computer system. Also explain data transfer signals on PCI bus. **10**
- OR
6. a) Write notes on :
- 1) USB
 - 2) Cache Memory. **16**

SECTION – II

7. a) Explain 8086 architecture. **8**
- b) With suitable example explain difference between rotate and shift instructions. **4**
- c) Explain with suitable example how physical address of operand is calculated in 8086. **4**
- OR
8. a) Explain interrupt vector table of 8086. **8**
- b) Explain string instructions of 8086. **8**
9. a) Explain flag register of 80386. **8**
- b) Explain memory paging mechanism in 80386. **8**
- OR
10. a) Explain segment descriptor in detail. **8**
- b) Explain the use of various registers in 80386. **8**



11. a) What is the difference between loosely coupled and tightly coupled multiprocessor system ? **6**
- b) Compare RISC and CISC. **6**
- c) Explain pipelining mechanism of RISC processor. **6**

OR

12. a) List and explain various registers in ARM core. What are different modes of operation in ARM ? **5**
- b) Explain superscalar processor architectures. **8**
- c) Explain role of Barrel shifter in ARM core data flow model. **5**

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