Code No. : 5235/O

FACULTY OF ENGINEERING
B.E. 2/4 (CSE) I Sem. (Old) Examination, December 2011
COMPUTER ORGANIZATION AND ARCHITECTURE

Time: 3 Hours] [Max. Marks: 75

Note : *Answer **all** questions from Part **A**. Answer **any five** questions from Part **B**.*

PART – A **(25 Marks)**

1. A digital computer has a common bus system for 16 register of 32 bits each, the bus is constructed with multiplexer.
   a) How many selection input are there in each multiplexer ?
   b) What size of multiplexers are needed ?
   c) How many multiplexers are there in the bus ? **3**
2. Give the basic difference between micro-operation and micro instruction. **2**
3. What is the function of program counter, instruction register, data register ? **3**
4. What is effective address ? Calculate effective address for indexed addressing mode. **2**
5. What is pipelining ? Explain with an example. **3**
6. What are the Flyn's classification ? **2**
7. What is meant by cycle stealing concept in DMA ? **2**
8. What is the concept behind Memory Inter leaving ? **2**
9. Derive the match logic for a single word in associative memory. **3**
10. Draw and explain the message format for character oriented protocol. **3**

PART – B **(50 Marks)**

11. a) Draw and explain the flow chart for instruction cycle. **6**
    b) Explain the functions of basic registers for basic computer. **4**
12. a) What are major types of interrupts ? **4**
    b) Write the microoperation required to implement sub routine call and return from last subroutine. **6**

13. a) Draw and explain block diagram of BCD adder. 4
    b) Explain the booth algorithm. 6

14. a) Distinguish between isolated I/O configuration and memory mapped I/O configuration. 5
    b) Distinguish between synchronous transmission and asynchronous transmission. 5

15. a) Explain the concept behind virtual memory. 6
    b) Explain the content addressable memory. 4

16. Write short note :
    a) Magnetic disk
    b) Micro program sequences for a control memory
    c) Stack organization.

17. a) Draw and explain the block diagram of DMA. 7
    b) Write about the locality of reference. 3