



Code No. : 3294

FACULTY OF ENGINEERING
B.E. 2/4 (CSE) I Semester (Main) Examination, December 2010
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. What do you understand by tristate logic devices ? Explain. 3
2. Distinguish between direct and indirect memory reference instructions and specify the number of memory accesses to get an operand. 2
3. Explain the meaning of the terms control word and control memory. 2
4. Distinguish between RISC and CISC instructions. 3
5. Explain what do you understand by divide overflow. 2
6. What are the corrective actions taken when two BCD numbers are added ? 3
7. Distinguish between asynchronous data transfer and synchronous data transfer. 2
8. What do you understand by a priority encoder ? Explain with an example. 3
9. Compute the hit ratio of a virtual memory system having main memory access time of 500 n secs, secondary storage access time of 20 m secs and average access time of 4.4 m secs. 3
10. Distinguish between random access memory and serial access memory with suitable examples. 2

PART – B

(50 Marks)

11. Draw the arithmetic, logic and shift (ALU) unit block diagram and explain its operation. 10
12. a) List out the computer instructions and group them into broad categories.
b) Explain all the arithmetic oriented instructions with suitable examples. (2+8)
13. It is required to perform the addition of two sets of floating numbers stored in two arrays. Explain how it is done using parallel processing techniques. You are allowed to use block diagrams to explain the operations involved. 10
14. a) Explain the daisy chain mechanism of data transfer.
b) Explain briefly the purpose served by an IO processor in data transfer between a peripheral device and CPU. (5+5)
15. a) What do you understand by virtual memory ?
b) Explain mapping in segmented page memory unit with the help of a block diagram. What do you understand by translation look aside buffer (TLB) ? (2+8)
16. a) Explain direct, relative and immediate addressing modes.
b) What is an array multiplier ? Explain its operation. (5+5)
17. Write brief notes on the following topics : (5+5)
- a) Memory hierarchy
- b) Micro instruction format
- c) Handshaking in data transfer.