

Roll No.

2117

B. E. 4th Semester (I. T.)

Examination – December, 2011

COMPUTER ARCHITECTURE AND ORGANIZATION

Paper : CSE-210-E

Time : Three hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any five questions.

1. (a) Simplify the following expression using Boolean algebra : 10
 - (i) $AB + A(CD + CD')$
 - (ii) $(BC' + A'D)(AB' + CD')$
- (b) Differentiate between the sequential and combinational circuits. 5
- (c) Differentiate between the latch and flip-flop. 5
2. (a) Explain the concept of micro architecture in detail. 10
- (b) What do you mean by operating system ? Explain. 10

3. (a) Differentiate between RISC and CISC. 10
(b) Explain various addressing models in detail. 10
4. (a) A non pipeline system takes 50 ns to process a task. The same task can be processed in a six segment pipeline with a clock cycle of 10 ns. Determine the speedup ratio of the pipeline for 100 tasks. What is the maximum speed up that can be achieved ? 10
(b) W.A.P. in assembly language to subtract two numbers. 10
5. (a) A computer uses RAM chips of 1024 X1 capacity : 10
(i) How many chips are needed and how should their add lines be connected to provide a memory capacity of 1024 bytes ?
(ii) How many chips are needed to provide a memory capacity of 16 K bytes ?
(b) Explain *three* different types of mappings used in Cache memory. 10
6. (a) Explain instruction level parallelism in detail. 10
(b) What do you mean by multiprocessor system ? 10
7. (a) Explain various I/O reference and input reference of 8086. 10
(b) Explain different types of interrupts of 8086. 10

8. Write short notes on :

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| (i) Locality of reference, | 10 |
| (ii) Binary counters. | 10 |

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