

24165

B.Tech. 5th Semester (E.C.E.) Examination,

December-2012

COMPUTER ARCHITECTURE AND ORGANIZATION

Paper-CSE-210-F

Time allowed : 3 hours]

[Maximum marks : 100

Note : *Q. No. 1 is compulsory. After that attempt one question from each section. Total five questions are to be attempted including Q. 1.*

1. (a) What are the various interrupts of 80×86 ? 5
(b) Explain JK and D flip-flop with truth table. 5
(c) Write short note on locality reference principle. 5
(d) Explain fixed instruction set format. 5

Section-A

2. (a) Compare the Architecture of SISD, MISD and MIMD. Also compare their applications. 10
(b) What do you mean by structured organization ? Discuss multilevel viewpoint of digital computer in detail. 10
3. (a) Define the term register. Design a 4-bit bidirectional shift register with parallel load. 10
(b) Draw the logic diagram and truth table for full adder. 10

Section-B

4. (a) Explain addressing modes and discuss its type. 10
(b) Discuss the CISC and RISC architectures with help of their functional block diagrams. Also indicate their advantages and drawbacks. 10

24165-P-2-Q-9

[P.T.O.]

5. (a) How arithmetic expressions are evaluated in a stack based CPU ? Explain process in detail. 10
- (b) How a computer instruction is executed ? Draw the instruction cycle. 10

Section-C

6. (a) Compare the characteristics of Static and Dynamic RAM. 8
- (b) What is the design principle for cache memory ? Discuss the following cache mapping scheme. 12
7. (a) How performance of processing can be enhanced by pipelining ? 8
- (b) Differentiate between control flow data flow transfer. 6
- (c) What is micro instruction Sequencing ? Explain. 6

Section-D

8. (a) Discuss the tightly coupled and loosely coupled multiprocessor architecture with block diagrams. 10
- (b) Describe any three metrics for performance measure of parallel computing. 10
9. (a) State and explain Amdahl's law. 10
- (b) What is Parallelism ? How throughput is enhanced with the help of parallelism ? 10