

**B.Tech. (CSE) 4th Semester F. Scheme Examination,  
May-2015**

**COMPUTER ARCHITECTURE AND ORGANISATION  
Paper-CSE-210 F**

*Time allowed : 3 hours]*

*[Maximum marks : 100*

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*Note : Attempt five questions in total. Question No. 1 is compulsory and attempt one question from each section.*

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1. (a) Define computer architecture. 8×2½
- (b) Differentiate between fixed and variable length instructions with example.
- (c) Differentiate between direct and indirect addressing.
- (d) Differentiate between interrupt and trap.
- (e) What is parallel processing ?
- (f) Differentiate between static and dynamic memory.
- (g) What is hybrid instruction ?
- (h) What is the role of control memory in computer organization ?

**Section-A**

2. (a) Design a combinational circuit with three inputs  $x, y, z$  and three outputs  $A, B, C$ . When the binary input is 0, 1, 2, 3 the binary output is one greater than the input when the binary point is 4, 5, 6, 7, the binary output is one less than the input. 10
- (b) What do you mean by a multiplexer ? Design a  $4 * 1$  multiplexer using AND, OR and NOT gate. 10
3. (a) Describe Flynn's classification of computers. 10
- (b) Draw and explain the multilevel viewpoint of a machine. [ersahilkagyan.com](http://ersahilkagyan.com) 10

**Section-B**

4. (a) What are the characteristics of RISC computers ? 10
- (b) Explain any five arithmetic micro instructions. 10
5. Explain various addressing modes with examples. 20

**Section-C**

6. Draw and explain instruction cycle. 20

7. (a) Define the term “locality of reference”. How this concept is used in the design of memory system ? 10
- (b) Explain set associative mapping scheme. 10

### Section–D

8. (a) State and explain the Amdahl’s law. 10
- (b) How the throughput of a system can be enhanced with parallel mechanisms ? 10
9. (a) What do you mean by control memory ? How is it different than simple memory ? 10
- (b) What are the various type of instructions supported by the 8086 family ? Discuss each briefly. 10