# 24165

**B.Tech. 4th Semester (CSE) Examination,**
**May – 2016**
**COMPUTER ARCHITECTURE AND ORGANIZATION**
**Paper–CSE-210-F**

*Time allowed : 3 hours ]* *[Maximum marks : 100*

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

**1.** (a) Define an instruction. 8×2.5=20

(b) Differentiate between primary and secondary storage.

(c) List any five shift micro-operations.

(d) Differentiate between flip flop and latch.

(e) Differentiate between encoders and decoders.

(f) Define locality of reference.

(g) Mention various memory parameters.

(h) Define concurrency.

**Section–A**

**2.** Prove the following :

(i) A positive logic AND gate operation is equivalent to negative logic OR operation.

(ii) $\overline{A}BC + A\overline{B}C + AB\overline{C} + ABC = AB + BC + CA$ 20

3. (a) What are the characteristics of RISC computers. 10

(b) Why a number of addressing mode is needed ? By taking suitable examples explain the following addressing modes : 10

(i) Direct

(ii) Index

(iii) Relative

(iv) Immediate

(v) Register

## Section–B

4. (a) Compare CISC and RISC computers. 10

(b) Explain any five logical micro instructions. 10

5. (a) Define the term"locality of reference". How this concept is used in the design of memory system? 10

(b) What do you mean by cache memory ? Draw and explain the block diagram of cache Memory. 10

## Section–C

6. Draw and explain instruction cycle. 20







7. (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

## Section–D

8. (a) Differentiate between memory reference, register reference and I/O reference. 10

(b) Differentiate between instruction level and processor level parallelism. 10

9. (a) Draw and explain the multilevel viewpoint of a machine. 10

(b) What are the various types of operating systems ? Discuss the characteristics of each briefly. 10