B. Tech. 5th Semester (F) Scheme (ECE) Examination,

December–2018

COMPUTER ARCHITECTURE AND

ORGANISATION

Paper–CSE-210-F

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

Note : *Attempt **five** questions in all selecting at least **one** question from each section Q. No. 1 is compulsory. All questions carry equal marks.*   8×2.5=20

1. Explain the following :

   (a). Define an instruction.

   (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. (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 register ? Draw the block diagram of a 4-bit bi-directional shift register. 10

3. (a) Describe SISD, SIMD, MIMD. 10

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

Section–B

4. Draw and explain the detailed data path for a register based CPU and stock based CPU. 20

5. (a) Explain any five addressing modes with examples. 10

(b) Explain various instruction formats. 10

Section–C

6. (a) State and explain the Amdahl's law. 10

(b) How the throughput of a system can be enhanced with parallel mechanisms ? 10

7. (a) What are the various parameters that can be used to evaluate the performance of a memory unit? 10

(b) Explain direct cache mapping scheme. 10

Section–D

8. (a) What are the various parameters that can be used to evaluate the performance of a memory Unit. 10

(b) What do you mean by structure organization ? 10

9. (a) What do you mean by control memory ? How is it different than simple memory ? 10

(b) What do you mean by Interrupt ? Explain various types of interrupts. 10