

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER- IV(NEW) EXAMINATION – SUMMER 2015**

**Subject Code: 2140707**

**Date:01/06/2015**

**Subject Name: Computer Organization**

**Time: 10:30am-1.00pm**

**Total Marks: 70**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain how complement number system is useful in computer system. Discuss any one complement number system with example. **07**  
(b) Define RTL. Explain how register transfer takes place in basic computer system **07**

- Q.2** (a) What is a micro operation? List and explain its categories. **07**  
(b) Draw and explain basic computer instruction formats. **07**

**OR**

- (b) Draw the block diagram of control unit. **07**

- Q.3** (a) Write an assembly language program to add 10 numbers from memory. **07**  
(b) What is register stack? Explain push and pop micro-operations. **07**

**OR**

- Q.3** (a) Explain pipelining technique. Draw the general structure of four segment pipeline. **07**  
(b) Draw flow chart for multiplication of two floating point numbers. **07**

- Q.4** (a) How addressing mode is significant for referring memory? List and explain types of addressing modes. **07**  
(b) Explain RISC. List its characteristics. **07**

**OR**

- Q.4** (a) Explain asynchronous data transfer using timing diagrams. **07**  
(b) How main memory is useful in computer system? Explain the memory address map of RAM and ROM. **07**

- Q.5** Attempt **ANY FOUR** **14**

- (a) Memory reference instructions
- (b) Explain instruction formats with its types.
- (c) Daisy chain arbitration.
- (d) Instruction cycle
- (e) Passes of an assembler.
- (f) Content Addressable Memory

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