

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III • EXAMINATION – SUMMER 2013****Subject Code: 130704****Date: 23-05-2013****Subject Name: Computer Organization and Architecture****Time: 02.30 pm - 05.00 pm****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) Define following terms 6
1. RTL 2. Micro-operation 3. Accumulator 4. Interrupt 5. Parallel processing
6. Assembler.
- (b) Draw the block diagram of 4-bit arithmetic circuit and explain it in detail. 8
- Q.2** (a) Define Instruction Cycle. Explain its phases in brief with example. 7
(b) Explain the process of first pass of an assembler with flow chart. 7
- OR**
- (b) Draw and explain flow chart of Interrupt Cycle. 7
- Q.3** (a) Write an assembly language program to subtract two double precision 7
numbers.
- (b) What is an addressing mode? List and explain various addressing modes of 7
a computer with example.
- OR**
- Q.3** (a) Write an assembly language program to take a character as input and 7
outputs it.
- (b) What is the importance of status bits for program control? Which types of 7
status bits are stored in a status register? Explain it with block diagram.
- Q.4** (a) Draw and explain block diagram of BCD adder. 7
(b) Explain Stack Organization of a computer system. Explain push and pop 7
operations on register stack.
- OR**
- Q.4** (a) Explain the concept of overlapped register window for a procedure call. 7
(b) Differentiate memory reference and non-memory reference instructions. 7
Give example of each with required micro-operations.
- Q.5** (a) Differentiate RISC and CISC. 6
(b) Attempt **any TWO** 8
1 Pipelining technique.
2 Booth Multiplication Algorithm.
3 Memory Interleaving.
