Enrollment No.

Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous)

Affiliated to Saurashtra University, Rajkot

SEMESTER END EXAMINATION APRIL – 2017

Bachelor of Computer Application

16UCACC06 – COMPUTER ORGANIZATION AND ARCHITECTURE

Duration of Exam – 3 hrs

Semester – II

Max. Marks – 70

<u>Part A</u> (10x1= 10 marks) Answer <u>ALL</u> questions

- 1. What is Boolean Algebra?
- 2. Digital Computer is _____ which perform _____.
- 3. Define Clock Pulse.
- 4. State whether the following statements are TRUE or FALSE.

Flip Flop is a binary cell and capable to storing one bit binary operation.

- 5. Perform binary multiplication 111011 x 110.
- 6. Convert this number + 4362.68 into Floating Point Representation(M x R^e)
- 7. Write a control word register of R2 ← R3+R4
- 8. Convert (2*3) + (4*5) from infix to prefix (Polish Notation).
- 9. Explain the difference between Burst Transfer and Cycle Stealing method for data transfer in DMA in one Statement
- 10. List out types of Bus in digital computer.

<u>Part B</u> (5X5 = 25 marks) Answer <u>ALL</u> questions

- 11a. Write a note on Basic Logic Gate.
- OR
- 11b. Explain Exclusive Gate in detail.
- 12a. Write a note on D (Data) flip flop.
- OR
- 12b. Discuss on Full Adder.

13a. Discuss on 4 x 1 line Multiplexer.

OR

13b. What is Counter? Explain 4 bit Binary Up Counter.

14a. What is Interrupt? Explain types of interrupt.

OR

14b. Explain types of notation and give brief introduction on Reverse Polish notation.

15a. Write a note on Input Output Bus.

OR

15b. Explain Memory Bus.

<u>Part C</u> (5X7 = 35 marks)Answer <u>ALL</u> questions

16a. Explain block diagram of Digital Computer.

OR

- 16b. Simplify the Boolean Function F using POS with the Don't Care conditions: $F(A, B, C,D) = (0,1,4,5,9,10) \cdot D(3,6,7,8,14)$
- 17a. Explain Difference between Combinational Circuit V/S Sequential Circuit.

OR

- 17b. Note on JK flip flop.
- 18a. Explain 3 x 8 line Decoder.

OR

- 18b. What is Register? Explain 4 bit Register with parallel load.
- 19a. Explain Register Stack.

OR

- 19b. Explain General Register Organization.
- 20a. Explain Direct Memory Access (DMA).

OR

20b. Write a note on IOP.