Roll No. .....

97666

B.C.A. 2nd Semester

Examination–May, 2015

Logical Organization of Computer

Paper-BCA-107

Time : 3 hours ***Max. Marks : 80***

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : Question No. 1 is **compulsory**. Attempt remaining **four** questions selecting at least **one** question from each unit. All questions carry equal marks.

1. (a) What are flip-flop excitation tables?

(b) What is latch?

(c) What is the role of serial input and serial output in shift register?

(d) Differentiate synchronous and asynchronous sequential circuit.

(e) Discuss different memory access methods.

(f) What is flash memory?

(g) What is interrupt? How interrupt is handled?

(h) What happens when a branch instruction is encountered during the execution of a program?

Unit-I

2. (a) Discuss the operations of S-R flip-flop.

(b) Discuss the concept of state table and state diagram with examples.

3. (a) What are flip-flop excitation tables? Discuss with example.

(b) Define edge-triggered and master-slave flip-flops with diagram.

Unit-II

4. What is shift register? Discuss the functionality of 4-bit bidirectional shift register with diagram.

5. Differentiate the following:

   (a) Synchronous and asynchronous binary counters

   (b) Modulo-N and Up-Down counters

Unit-III

6. (a) Discuss different types of semiconductor memories.

   (b) Write notes on the following:

   (i) Optical storage devices

   (ii) Flash memory

7. (a) What are I/O devices? Give five examples of each.

   (b) Discuss the concept of I/O controllers.

Unit-IV

8. (a) What is I/O interface? What are the needs for I/O interface?

(b) What is priority interrupt? Discuss methods used for establishing priorities of multiple simultaneous interrupt.

9. Discuss various ways to conduct DMA transfer and operation of DMA controller along with its block diagram.
