9. Explain the following :

(a) Instruction Format 8

(b) I/O Channel 8

Roll No. .....

97666

BCA 2nd Semester

Examination – April, 2018

LOGICAL ORGANIZATION OF COMPUTER

Paper : BCA-107

Time : Three Hours] *[Maximum 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 examination.

Note : Question No. 1 is ***compulsory***. Attempt ***four*** questions by selecting ***one*** question from each Unit. All questions carry equal marks.

1. (a) What is Interrupt structure ? $2 \times 8 = 16$

(b) What is an Instruction Set ?

(c) What are applications of ROM ?

(d) What is an Instruction Cycle ?

(e) What is an I/O Interface ?

(f) What characterizes optical storage devices ?

(g) What is an Instruction Format ? State their significance.

(h) What is D flip-flop ?

UNIT – I

2. (a) What are Excitation Tables ? How are these relevant ? Draw Excitation Table for RS and JK flip-flop. 8

(b) What are race conditions ? How does Master-Slave flip-flop overcome race conditions ? Illustrate its working. 8

3. Explain the following :

(a) Clocked RS flip-flop 8

(b) State Diagram 8

UNIT – II

4. (a) What is Modulo-10 counter ? How do you design it ? Explain its working through block diagram. 8

(b) Design a 4-bit shift register and outline the procedure for serial to parallel conversion and vice-versa. 8

5. Explain the following :

(a) Up-Down Counter 8

(b) Asynchronous Sequential Circuit 8

UNIT – III

6. (a) What are I/O device controllers ? How these work ? Illustrate their working. 8

(b) What is Internal memory ? How is it different from External memory ? What are important memory parameters ?Illustrate. 8

7. Explain the following :

(a) Flash Memory 8

(b) Semiconductor RAM 8

UNIT – IV

8. (a) What are Addressing Modes ? What are different Addressing Modes ? Illustrate through examples. 8

(b) What is DMA technique ? How is it different from Interrupt-controlled I/O technique ? Illustrate their working. 8