9. Explain the following :

(a) Instruction Cycle 8

(b) Instruction Format 8



Roll No. .....

# 97666

## BCA 2nd Semester

## Examination – July, 2021

### 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 other ***four*** questions by selecting ***one*** question from each Unit. All questions carry equal marks.

1. (a) What is program-controlled I/O technique ? 2×8=16

(b) What is up-down counter ?

(c) What is an Instruction Format ?

(d) What is clocked RS flip-flop ?

(e) What characterizes flash memory ?

(f) Why Master-Slave flip-flop is called so ?

(g) What are applications of ROM ?

(h) What is an IOP ? State its significance.

## UNIT – I

**2.** (a) What do you mean by State Diagrams ? How are these relevant in design of Flip-flops ? Explain. 8

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

**3.** Explain the following :

(a) T Flip-Flop 8

(b) Master-Slave flip-flop 8

## UNIT – II

**4.** (a) What is meant by a universal shift registers ? Design a 4-bit shift register and outline the procedure for serial to parallel conversion and vice-versa. 8

(b) What are synchronous binary counters ? Draw its block diagram and illustrate its operation. 8



**5.** Explain the following :

(a) Asynchronous Sequential Circuit 8

(b) Modulo-8 Counter 8

## UNIT – III

**6.** (a) What is semiconductor RAM ? How do you design a RAM cell ? Illustrate. 8

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

**7.** Explain the following :

(a) Magnetic Disks 8

(b) Characteristics of Memory Cell 8

## UNIT – IV

**8.** (a) What are I/O channels ? How do these work ? Illustrate their working. 8

(b) What are interrupts ? How are these useful ? What is Interrupt structure ? Illustrate. 8