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Roll No. ....

ID—8037

**B.C.A. EXAMINATION, 2022**

(Batch 2021-2022)

(Second Semester)

**LOGICAL ORGANISATION OF  
COMPUTER-II**

**Code : BCA107**

*Time : 3 Hours*

*Maximum Marks : 80*

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

**Note :** Q. No. 1 is compulsory and attempt *Four* more questions selecting *one* question from each Unit.

1. Write short notes on the following : 8×2
- What is Input-Output Interrupt.
  - Can we design Computer System devoid of RAM ?
  - Explain the term 'Addressing Modes'.
  - What is a Latch.
  - What is a Register ?
  - What is a Binary Counter ?
  - List characteristics of optical storage devices.
  - What is T-flip-flop.

**Unit I**

2. (a) Describe State table, state diagram and state equations of JK-flip-flops. 10
- (b) Differentiate between D- and T- flip-flops. 6
3. (a) Can we design a Sequential Circuit without flip-flops ? Why so ? With the help of a neat and clean diagram explain working of SR- flip-flops. 10

- (b) How race-around condition in a Master-Slave flip-flop can be eliminated ? 6

### Unit II

4. (a) Differentiate between synchronous and asynchronous counters. 8  
(b) How will you implement Mod-12 counter? Describe with diagram. 8
5. (a) Differentiate between SISO and SIPO with suitable diagrams. 8  
(b) Why Counters are called so? Describe up-down counters? 8

### Unit III

6. Explain the term 'Memory Hierarchy'. Why do we install so many types of memories in a computer system? Differentiate between magnetic and semi-conductor memories. 16

7. Write short notes on the following :

- (a) Variety in Peripheral devices.  
(b) Input and output devices.  
(c) Input-Output port.  
(d) Why is RAM called 'Random Access Memory'?  $4 \times 4 = 16$

### Unit IV

8. Pre-requisite of connecting new printer to a computer system. Describe I/O Channels and IOP. 16
9. Define addressing modes and instruction formats. Explain their purpose and types. 16