

**311202**

**August/September 2022**

**BCA II SEMESTER**

**Logical Organization of Computer-II (BCA-17-107)**

Time : 3 Hours]

[Max. Marks : 75

*Instructions :*

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

**PART-A**

1. (a) What is a flip-flop? (1.5)
- (b) Difference between EPROM and EEPROM. (1.5)
- (c) Difference between Synchronous and Asynchronous Counters. (1.5)
- (d) What is Cache memory? (1.5)
- (e) Explain the Interrupt cycle. (1.5)

- (f) What is the Excitation table of the J-K Flip-flop? (1.5)
- (g) What is a clock signal? (1.5)
- (h) What is an Instruction set? (1.5)
- (i) What is an I/O Interface? (1.5)
- (j) What are the applications of ROM? (1.5)

**PART-B**

- 2. (a) For the SR flip-flop write the truth table, characteristic equation, excitation table, and draw the state diagram. (8)
- (b) Explain Master Slave flip-flop in detail. (7)
- 3. (a) Explain SIPO Shift Register with Example. (5)
- (b) What is a bidirectional shift register? Explain with the help of a 4-bit bidirectional register. (10)
- 4. What is the difference between a ring counter and a twisted ring counter? Design a 4-bit UP Counter with the help of a T flip-flop. (15)
- 5. (a) What is the Instruction Cycle? (5)
- (b) What is an Instruction Format? Also, explain its types. (10)

- 6. (a) Discuss different types of semiconductor memories. (10)
- (b) Write a short note on optical storage devices. (5)
- 7. What are addressing modes? Explain different Addressing Modes. (15)