

**A-0848**

**Total Pages : 4**

**Roll No. -----**

**BCA-11**

**Computer Organization**

**Bachelor of Computer Application (BCA)**

**4<sup>th</sup> Semester Examination 2024(Dec.)**

**Time: 2:00 hrs**

**Max. Marks: 70**

**Note :** This paper is of Seventy (70) marks divided into Two (02) Section A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

**P.T.O.**

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## **Section-A (Long-Answer-Type Questions)**

Note : Section 'A' contains Five (05) long-answer-type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

[2x19=38]

- Q.1. Design a 4-Bit Binary Counter Using Flip-Flops.
- Q.2. Difference between Synchronous and Asynchronous Sequential Circuits.
- Q.3. Explain the concept of pipelining in computer architecture.
- Q.4. Explain Digital components in Detail.
- Q.5. What is the difference between Cache & Virtual memory? Explain their advantages & disadvantages?

## Section-B (Short-Answer-Type Questions)

Note : Section 'B' contains Eight (08) short-answer-type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only.

[4x8=32]

- Q.1. What is the purpose of a logic gate in a digital circuit?
- Q.2. What is the difference between a flip-flop and a latch in digital electronics?
- Q.3. What is the role of an I/O controller in a computer system?
- Q.4. Why is RAM considered volatile memory, while external storage devices like hard drives are non-volatile?
- Q.5. What is the function of cache memory in a computer system?

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- Q.6. What is a data hazard in pipelining?
- Q.7. How do memory access operations differ between CISC and RISC?
- Q.8. Explain the key features of RISC, and discuss its advantages and disadvantages?

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