

Subject Code:- 

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Subject:- 

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| Computer Organization and Architecture |
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Roll No:- 

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## TECNIA INSTITUTE OF ADVANCED STUDIES

BCA

Class Test (2025-2026)

Shift – M &amp; E

Sem: 3<sup>rd</sup>

Set - I

Date: 

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Time: -1:00 Hours

Max. Marks: 30

**General Instructions:**

- All Questions are compulsory. Answers should be brief and to the point.
- It comprises three sections, A, B, and C. you are to attempt all the sections.
- **Section A** – Question No -1 is Very Short Answers type carrying 2 marks each. You are required to answer ALL.
- **Section B**- Question No-2 is Short Answers type question carrying 5 marks each. You are required to attempt any TWO out of THREE questions given.
- **Section C**- Question No -3 is Long Answer type question carrying 10 marks each. You need to attempt any one.
- Students are instructed to cross the blank sheets before handing over the answer sheet to the invigilator.
- No sheet should be left blank. Any written material after a blank sheet will not be evaluated /checked.

|           |   | CO  | BT       | M                |
|-----------|---|-----|----------|------------------|
|           | <b>SECTION –A</b>   |     |          | <b>(10)</b>      |
| <b>1.</b> | <b>Attempt All of the following.</b>  |     |          | <b>(5*2=10)</b>  |
|           | <b>a.</b> What is Logic Gate? Give examples   | CO1 | L1       |                  |
|           | <b>b.</b> Define Boolean Algebra?   | CO1 | L1       |                  |
|           | <b>c.</b> What is Flip Flop?  | CO2 | L1,L2    |                  |
|           | <b>d.</b> What is K-map?  | CO1 | L1,L2    |                  |
|           | <b>e.</b> What is Counter?  | CO2 | L1,L2    |                  |
|           | <b>SECTION –B</b>   |     |          |                  |
| <b>2.</b> | <b>Answer any <u>Two</u> of the following.</b>  |     |          | <b>(2*5=10)</b>  |
|           | <b>a.</b> Explain the Multiplexer and De-Multiplexer with example.                              | CO3 | L2,L3    |                  |
|           | <b>b.</b> Explain SOP and POS forms with examples?  | CO3 | L1,L2    |                  |
|           | <b>c.</b> Explain the working of S-R and D Flip Flop?   | CO1 | L1,L2,L3 |                  |
|           | <b>SECTION –C</b>   |     |          |                  |
| <b>3.</b> | <b>Answer any <u>One</u> of the following.</b>  |     |          | <b>(1*10=10)</b> |
|           | <b>a.</b> Simplify the Boolean equation using K-map: $F(A,B,C,D) = \Sigma(0,1,2,5,8,9,10,13)$ . | CO1 | L1,L2,L3 |                  |
|           | <b>b.</b> Explain the working of a Half Adder and Full Adder with circuit diagrams?             | CO1 | L1,L2,L3 |                  |