647510 **BCAcoMD202x-2C** **Seat No :_____**

B.C.A Semester - 2 (NEP-2020) Examination

MARCH/APRIL-2026

Computer Organization and Architecture (Multidisciplinary Course)

Time: 2:00 Hours **Marks: 50**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que. 1 Answer the following question. (Any two) (10)

1) List out all logic gates and explain any two of them in brief.
2) Explain De-Morgans theorem.
3) Explain the Block diagram of Computer.
4) Draw and explain K-Map for $F(w, x, y, z) = \Sigma (1, 5, 12, 13) + d(3, 6, 7, 8, 9, 14)$.

Que. 2 Answer the following question. (Any two) (10)

1) Explain Half Adder.
2) Explain Full Subtractor.
3) Explain SR Flip Flop.
4) Explain JK Master Slave Flip Flop

Que. 3 Answer the following question. (Any two) (10)

1) Explain 2-to-4 Line Decoder in details.
2) Explain 8 to 3 Line Encoder.
3) Explain bi-directional shift register with parallel load.
4) What is binary counter? Explain it in details.

Que. 4 Answer the following question. (Any two) (10)

1) What is Control Word? Explain it.
2) Explain the General Register Organization of CPU.
3) Explain Polish Notation with example.
4) Explain Register stack in details.

Que. 5 Answer the following question. (Any two) (10)

1) Explain I/O Interface.
2) What is DMA Transfer? Explain it. Also explain Bus request and Bus grant.
3) What is IOP (Input Output Processor)? What is the main function of IOP?
4) Explain Auxiliary Memory and Cache Memory in details.

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