

**B.C.A Semester - 2 (CBCS) Examination****July-2025 (OLD COURSE)****CS-09 COMPUTER ORGANIZATION & ARCHITECTURE (CORE)****Time: 2:30 Hours****Marks: 70****Instructions:**

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

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- Que.1(A) Attempt following questions. (04)
1. A \_\_\_\_\_ sign is used to show the AND operation.
  2. In JK flip flop, JK stands for \_\_\_\_\_.
  3. In full-adder, there are three input and \_\_\_\_\_ output terminal.
  4. A gate is a logic circuit with one or more input signals but \_\_\_\_\_ output signal.
- Que.1(B) Attempt following. (Attempt any one) (02)
1. Explain AND, OR gate with truth table.
  2. Explain NAND gate with truth table.
- Que.1(C) Attempt following. (Attempt any one) (03)
1. Write note on Combinational Circuits.
  2. Explain working of T Flip Flop.
- Que.1(D) Attempt following. (Attempt any one) (05)
1. Explain SR flip flop in detail.
  2. Write a note on Full Adder.
- Que.2(A) Attempt following questions. (04)
1. PISO stands for \_\_\_\_\_.
  2. Multiplexing means \_\_\_\_\_ into one.
  3. VLSI stands for \_\_\_\_\_.
  4. DIL stands for \_\_\_\_\_.
- Que.2(B) Attempt following. (Attempt any one) (02)
1. What is IC?
  2. What is Register?
- Que.2(C) Attempt following. (Attempt any one) (03)
1. Explain Octal to Binary encoder.
  2. Explain block diagram of Register.
- Que.2(D) Attempt following. (Attempt any one) (05)
1. Write a note on  $3 * 8$  Decoders.
  2. Explain asynchronous 4 bit binary counters.
- Que.3(A) To calculate following binary digits. (04)
1.  $10000111 / 101 =$  \_\_\_\_\_.
  2.  $110000111 / 1011 =$  \_\_\_\_\_.
  3.  $110 * 110 =$  \_\_\_\_\_.
  4.  $1010.1 * 110 =$  \_\_\_\_\_.
- Que.3(B) Attempt following. (Attempt any one) (02)
1. Explain rules of binary Subtraction.
  2. Explain rules of binary Addition.

- Que.3(C) Attempt following. (Attempt any one) (03)
1. Explain floating point representation of number.
  2. Explain 2's complement method in detail with example.
- Que.3(D) Attempt following. (Attempt any one) (05)
1. Write note on Parity bit.
  2. Explain error detection code.
- Que.4(A) Attempt following questions. (04)
1. CPU stands for \_\_\_\_\_.
  2. In \_\_\_\_\_ notation the operator is placed before the operand.
  3. \_\_\_\_\_ perform arithmetic and logical calculation.
  4. The process of inserting an item into the stack is known as \_\_\_\_\_ operation.
- Que.4(B) Attempt following. (Attempt any one) (02)
1. What is Stack?
  2. What is Polish Notation?
- Que.4(C) Attempt following. (Attempt any one) (03)
1. Explain Component of CPU.
  2. Explain block diagram of ALU.
- Que.4(D) Attempt following. (Attempt any one) (05)
1. Explain Register Stack in detail.
  2. Explain Control Word in detail.
- Que.5(A) Attempt following questions. (04)
1. \_\_\_\_\_ is a bidirectional bus which allows the transfer of data between the microprocessor and memory or peripheral device.
  2. \_\_\_\_\_ carries address of memory location or port number of peripherals device.
  3. IOP stands for \_\_\_\_\_.
  4. DMA stands for \_\_\_\_\_.
- Que.5(B) Attempt following. (Attempt any one) (02)
1. What is DMA?
  2. List out Registers of DMA controller.
- Que.5(C) Attempt following. (Attempt any one) (03)
1. Explain Address Bus in detail.
  2. Explain Memory Bus in detail.
- Que.5(D) Attempt following. (Attempt any one) (05)
1. Write note on I/O interface.
  2. Explain DMA controller in detail.

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