



Seat No. \_\_\_\_\_

**HP-003-3042003**

**B. Sc. (IT) (Sem. II) (CBCS) (W.E.F. 2022) Examination**

**April - 2023**

**Computer Organization & Architecture : CS-09**

*(New Course)*

**Faculty Code : 003**

**Subject Code : 3042003**

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Time :  $2\frac{1}{2}$  / Total Marks : 70

- 1 (A) Attempt the following : 4
- (1) Which gate produce high output when both inputs are at same level ?
  - (2) Which gate is known as inverter ?
  - (3)  $(XY)^*$  = \_\_\_\_\_.
  - (4) What is truth table ?
- (B) Answer in brief (Any One) : 2
- (1) Explain OR gate with truth table, function and description.
  - (2) Explain D flip flop in detail.
- (C) Answer in detail (Any One) : 3
- (1) Explain K'Map in detail.
  - (2) Explain De-Morgan laws with the help of truth table.
- (D) Write a note on following : (Any One) 5
- (1) What is flip flop ? Explain SR Flip flop in detail.
  - (2) Write short note on universal gate.
- 2 (A) Attempt the following : 4
- (1) Write full form of IC.
  - (2) Which flip flop is used in shift register ?
  - (3) Write full form of LSI.
  - (4) Write full form of MUX.

- (B) Answer in brief (Any One) : 2
- (1) List out types of registers.
  - (2) What is encoder ?
- (C) Answer in detail (Any One) : 3
- (1) Explain 1 \* 4 Demultiplexer.
  - (2) Explain buffer register in detail.
- (D) Write a note on following (Any One) : 5
- (1) Explain 3 \* 8 decoder in detail.
  - (2) What is register ? Explain bi-directional shift register.
- 3 (A) Attempt the following : 4
- (1) What is mantissa ?
  - (2) What is 1's complement of 101101 ?
  - (3) The decimal equivalent of binary number 101110 is \_\_\_\_\_.
  - (4) What is error detection code ?
- (B) Answer in brief (Any One) : 2
- (1) Write rules for binary multiplication.
  - (2) Calculate 1010/101.
- (C) Answer in detail (Any One) : 3
- (1) Calculate 1011011 + 100100 and 101011 & 11011101 Using 2's complement.
  - (2) Explain term Overflow, Underflow and Normalization.
- (D) Write a note on following (Any One) : 5
- (1) Explain parity with error detection code.
  - (2) Explain floating point representation of the number.
- 4 (A) Attempt the following : 4
- (1) What is prefix notation ?
  - (2) Find out polish notation of  $A+B*C$ .
  - (3) Find out reverse polish notation of  $A+B*C$ .
  - (4) Write full form of RPN.
- (B) Answer in brief (Any One) : 2
- (1) What is control word ?
  - (2) Explain ALU.

- (C) Answer in detail (Any One) : 3  
(1) Explain memory stack.  
(2) What is address register ?
- (D) Write a note on following (Any One) : 5  
(1) Write short note on interrupt.  
(2) Explain major components of CPU.
- 5 (A) Attempt the following : 4  
(1) Data bus means \_\_\_\_\_.  
(2) \_\_\_\_\_ is a process of communication or data transfer that controlled by an external peripherals.  
(3) Write full form of DHCP.  
(4) Write full form of IOP.
- (B) Answer in brief (Any One) : 2  
(1) Explain memory bus.  
(2) What is burst transfer ?
- (C) Answer in detail (Any One) : 3  
(1) Explain concept of input output interface.  
(2) Explain DMA controller.
- (D) Write a note on following (Any One) : 5  
(1) What is DMA ? Explain how DMA transfer data.  
(2) Write short note on IOP.

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