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

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.
