Seat No. _____

HP-003-2042003

B. Sc. (I.T.) (Sem.-II) (CBCS)
(W.E.F. 2019) Examination

April - 2023

CS-09 : Computer Organization & Architecture
(Old Course)

Faculty Code : 003
Subject Code : 2042003

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

1 (A) Attempt the following: **4**
(1) The NOR gate is also known as _____.
(2) In JK Flip Flop JK stands for?
(3) Draw symbol of AND gate.
(4) Write truth table of XOR gate.

(B) Answer in brief: (Any **One**) **2**
(1) Draw logic diagram of F = X + Y' Z
(2) Explain postulates.

(C) Answer in detail: (Any **One**) **3**
(1) Write note on Universal gates.
(2) Explain half adder.

(D) Write a note on following: (Any **One**) **5**
(1) What is flip flop? Explain JK Flip Flop in detail.
(2) What is Logic Gates? Explain basic gates in detail.

2 (A) Attempt the following: **4**
(1) 3 to 8 line decoder is also known as _____ decoder.
(2) Write full form of IC.
(3) Write full form of VLSI.
(4) Multiplexer is also known as _____.

(B) Answer in brief: (Any **One**) **2**

(1) List out all types of registers.

(2) What is decoder?

(C) Answer in detail: (Any **One**) **3**

(1) Explain 1 * 4 Demultiplexer.

(2) Write note on binary counter.

(D) Write a note on following: (Any **One**) **5**

(1) Explain Octal To Binary Encoder in detail.

(2) What is register? Explain bi-directional shift register with parallel load.

3 (A) Attempt the following: **4**

(1) List out positional number systems.

(2) Find 1's complement of 101010.

(3) The HexaDecimal equivalent of decimal number 5644 is _____.

(4) Find 2's complement of 100100101.

(B) Answer in brief: (Any **One**) **2**

(1) Calculate 11001 * 11

(2) Calculate 11001 / 11

(C) Answer in detail: (Any **One**) **3**

(1) Explain fixed point representation.

(2) Explain 2's Complement method in detail with example.

(D) Write a note on following: (Any **One**) **5**

(1) What is parity Bit? Explain P(Odd) and P(Even) in detail.

(2) Explain floating point representation of the number.

4 (A) Attempt the following: **4**

(1) Write full form of RPN.

(2) The register that holds the address of stack is called _____.

(3) In prefix notation operator is placed _____ the operand.

(4) Write full form of ALU.

(B) Answer in brief: (Any **One**) **2**

(1) Write note on control word.

(2) Explain memory stack.

(C) Answer in detail: (Any **One**) **3**

(1) Write a short note on ALU.

(2) Explain register stack.

(D) Write a note on following: (Any **One**) **5**

(1) What is interrupt? Explain types of interrupt.

(2) Explain general register organization in detail.

5 (A) Attempt the following: **4**

(1) Which Bus used to connect the processor with main memory?

(2) Write full form of BG.

(3) Write full form of DMA.

(4) Write full form of BR.

(B) Answer in brief: (Any **One**) **2**

(1) Explain term burst transfer.

(2) Explain Control Register.

(C) Answer in detail: (Any **One**) **3**

(1) Write short note on IOP.

(2) Explain Address Register and Word Count Register.

(D) Write a note on following: (Any **One**) **5**

(1) What is DMA? Explain DMA controller.

(2) What is Bus? Explain types of buses used in computer architecture.
