Seat No. _____

HP-003-1032003

B. C. A. (Sem. II) (CBCS) (W.E.F. 2016) Examination

April - 2023

Computer Organization & Architecture : CS-09

(Old Course)

Faculty Code : 003

Subject Code : 1032003

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

1 (a) Attempt the following : **4**

(1) Which is the invertor gate of OR gate ?

(2) SOP stands for _____.

(3) T-flipflop can be easily constructed from JK flipflop. (True/False)

(4) Is flipflop is a sequentially designed circuit ?

(b) Attempt any one : **2**

(1) What is combinational circuit ?

(2) What is truth table ? Explain it with any example.

(c) Attempt any one: **3**

(1) Explain full adder.

(2) Simplify this function using K-map.

$$F(w,x,y,z) = \sum (0,2,4,6,9,11,13, 15)$$

(d) Attempt any one : **5**

(1) Write note on different types of gates.

(2) Write note on types of flip-flops.

2 (a) Attempt the following : **4**

(1) LSI stands for _____

(2) Multiplexer is also known as _____

(3) Asynchronous counter is also known as _____

(4) If we construct 8 bits MUX, then how many selection lines are required ?

(b) Attempt any one : **2**

(1) Explain IC and its types in brief.

(2) List out register's applications.

(c) Attempt any one : **3**

(1) Explain Multiplexer.

(2) Explain Encoder.

(d) Attempt any one : **5**

(1) Explain 3×8 decoder.

(2) Draw and explain bi-directional shift register.

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

(1) Base of Hexa-decimal number is _____

(2) Write 1's complement of 101011.

(3) Binary Addition of 1011 + 1001 = _____.

(4) If number is positive, then sign bit will be _____.

(b) Attempt any one : **2**

(1) Multiply 101 by 11 in binary.

(2) Divide 110111 by 101 in binary.

(c) Attempt any one : **3**

(1) Explain fixed point representation with example.

(2) Explain parity bit and sign bit with example.

(d) Attempt any one : **5**

(1) Explain error detection code.

(2) Explain floating point representation with example.

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

(1) ALU stands for _____.

(2) Control word is of _____ number of bits.

(3) RPN stands for _____.

(4) Full form of AC resister.

(b) Attempt any one : **2**

(1) Explain Memory stack,

(2) Explain any one example of Micro operation.

(c) Attempt any one : **3**

(1) Draw and explain block diagram of ALU.

(2) Explain Resister Stack.

(d) Attempt any one : **5**

(1) Write a note on general resister organization.

(2) What is interrupt ? Explain its types.

5 (a) Attempt following : **4**

(1) IOP stands for _____

(2) Full form of BR signal in DMA.

(3) DMA stands for _____

(4) Which resister holds the number of words to be transfer in DMA ?

(b) Attempt any one : **2**

(1) What is input output interface ?

(2) What is programmed I/O ?

(c) Attempt any one : **3**

(1) Note on types of memory buses.

(2) Write note on IOP.

(d) Attempt any one: **5**

(1) Explain how DMA works in detail.

(2) Write note on DMA transfer.

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