DBY-003-2032003-N   Seat No. _____

B. C. A. (Sem. II) (CBCS) Examination

July - 2022

CS-09 : Computer Organization & Architecture

(New Coruse)

Faculty Code : 003
Subject Code : 2032002

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

1   (a)   Answer the following :   4

         (1)   _____ Gate is also called ANY gate.

         (2)   NOT gate is represented by _____.

         (3)   NAND and NOR are example of _____ gate.

         (4)   SOP stands for _____.

  (b)   Answer any one in brief :   2

         (1)   What is Boolean algebra ?

         (2)   What is Don't care condition ?

  (c)   Answer any one in detail :   3

         (1)   Explain Universal gates in detail.

         (2)   Simplify the following using K –MAP : f(A,B,C,D) $= \sum(4,5,6,8,9,10) + d\ (1,3,7,11,15)$

  (d)   Answer any one :   5

         (1)   What is Flip – Flop ? Explain anyone in detail.

         (2)   What is Address ? Explain full adder in detail.

2   (a)   Answer the following :   4

         (1)   PMOS stands for _____.

         (2)   _____ is also known as data distributors.

         (3)   BCD stands for _____.

         (4)   CP stands for _____.

(b) Answer any one in brief :   **2**

    (1) What is SIPO ?

    (2) Give definition of Multiplexer.

(c) Answer any one in detail :   **3**

    (1) What is Integrated Circuit ? Explain level of Integrated Circuit.

    (2) Explain 4–bit Asynchronous counter.

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

    (1) Explain Encoder in detail.

    (2) Write a short note on Demultiplexer.

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

    (1) A binary point in the extreme right of the register to make the stored number as _____.

    (2) If we add 1 to its 1's complement is known as _____ of binary number.

    (3) Sign bit equal to _____ means negative number.

    (4) Find 1's complement of 0100111001 _____.

(b) Answer any one in brief :   **2**

    (1) Divide number 10110 by 10.

    (2) Multiply 110 by 110.

(c) Answer any one in detail :   **3**

    (1) What is 2's Complement ? Explain with example.

    (2) What is Signed Magnitude representation ?

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

    (1) Explain fixed point representation.

    (2) Explain Parity Bit with Error Detection Code.

4 (a) Answer any one in detail :   **4**

    (1) AC stands for _____.

    (2) RPN stands for _____.

    (3) ALU stands for _____

    (4) _____ is a word whose individual bit represents various control signals.

(b) Answer any one in brief : 2

    (1) What is Address Register ?

    (2) What is Stack Pointer ?

(c) Answer any one in detail : 3

    (1) What is Control Word ?

    (2) Explain Accumulator Register.

(d) Answer any one : 5

    (1) Explain major components of CPU.

    (2) Write a short note on General Register Organization.

5 (a) Answer the following : 4

    (1) IOP stands for _____.

    (2) DMA stands for _____.

    (3) _____ is a bidirectional because the signal can flow in either directions.

    (4) DCP stands for _____.

(b) Answer any one in brief : 2

    (1) What is Data Bus ?

    (2) What is Interface ?

(c) Answer any one in detail : 3

    (1) Explain Address Register.

    (2) Explain External Bus, Internal Bus and System Bus.

(d) Answer any one : 5

    (1) Explain I/O interface in detail.

    (2) Write a short note on IOP.

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