* M B H - 0 0 3 - 0 0 3 2 0 3 - 5 0 - 3 *

**MBH-003-003203** Seat No. _____

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

**March / April - 2018**

## CS - 09 : Computer Organization & Architecture

***(Old Course)***

**Faculty Code : 003**

**Subject Code : 003203**

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

**1** Answer the following : **20**

(1) A XOR gate has inputs A and B and output Y. Then the output equation is

(2) Demorgan's theorem is

(3) JK flip-flop is Universal flip-flop? (True/False)

(4) S-R type flip-flop can be converted into D type flip-flop if S is connected to R through

(5) J = 1, K = 1 is a J-K flip-flop made to toggle? (True/False)

(6) An example of SOP expression is _____

(7) On a Karnaugh map, grouping the 0s produces a

(8) 1011001110 / 101 = _____

(9) After Counting 00, 01, _____, 11.

(10) SR flip-flops is face the indeterminate condition problem? (True/False)

(11) The Digital system usually operated on _____ system.

(12) 110010101 * 1001 = _____

(13) An encoder has 2n input lines and _____ output lines.

(14) BR signal is activated by _____.

(15) Logic states can only be _____ or 0.

(16) IPO Stands for _____

(17) DMA Stands for _____

(18) Removing the CPU from the path and letting the peripheral device manage the memory buses directly is called _____.

(19) Asynchronous counters are known as _____.

(20) When CPU is executing the user programs then the CPU is said to be in _____.

**2** (A) Attempt Any **Three** : **6**

(1) What is Boolean algebra?

(2) What is Truth table?

(3) What is Postulates?

(4) What is Clock Pulses?

(5) What is Combinational Circuit?

(6) What is Sequential Circuit?

(B) Attempt Any **Three** : **9**

(1) Explain Boolean function using postulates.

(2) Explain Universal Gate.

(3) Explain Decoders

(4) Explain Integrated Circuits.

(5) Explain Block Diagram of Register.

(6) What is Interrupt? Explain types of interrupts.

(C) Attempt Any **Two** : **10**

(1) Explain full-adder circuit in detail.

(2) Write a short note on IC.

(3) Explain Floating point representation.

(4) Write a note on General Register Organization.

(5) Write a note on DMAController.

**3** (A) Attempt Any **Three** : **6**

(1) Explain Major Component of CPU.

(2) What is register stack?

(3) What is memory stack?

(4) What is Polish Notation?

(5) Explain 2×4 decoders.

(6) What is mantissa and exponent?

(B) Attempt Any **Three** : **9**

(1) Explain major components of CPU.

(2) Explain binary counter.

(3) Explain Don't care condition

(4) Write a note on clocked D Flip-flop.

(5) Explain three variables Exclusive - OR gate.

(6) Explain NAND gate as Universal gate.

(C) Attempt Any **Two** : **10**

(1) Write a note on JK & T flip flop.

(2) Explain 3-bit Asynchronous Binary up Counter

(3) Explain in detail Block diagram of ALU

(4) What do you mean by Parity Bit? Describe how data is transferred using Parity Bit.

(5) Explain : Data Bus, Address Bus and Control lines.

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