ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

WORKSHEET – 5

TOPIC – LOGIC GATES & COMBINATIONAL CIRCUITS

SUBJECT: COMPUTER APPLICATION **CLASS: XII**

F.M.: 15 **DATE: 07.05.2020**

➢ **Choose the correct option:** **(1X15=15)**

1) The basic operation of a half adder circuit is to add _____ binary digits:

(a) 2 (b) 3 (c) 4 (d) 5

2) To add 3 binary digits the combinational circuit used is:

(a) Binary Adder **(b) Full Adder** (c) Whole Adder (d) 3 Digit Adder

3) The sum output of a circuit adding the binary bits X, Y and carry - in Z is given by:

(a) $X \oplus Y + Z$ (b) $X + Y \oplus Z$ (c) $(X \oplus Y).Z$ **(d)** $X \oplus Y \oplus Z$

4) The carry - out output of a circuit adding the binary bits X, Y and carry in Z is given by:

(a) $X \oplus Y + XZ$ (b) $X + Y \oplus Z$ (c) $(X \oplus Y).XY$ **(d)** $(X \oplus Y)Z + XY$

5) How many half adder circuits are required to design a full adder circuit?:

(a) 4 (b) 3 **(c) 2** (d) 1

6) The difference output for a half subtractor circuit subtracting the bit B from bit A is :

(a) A . B **(b)** $A \oplus B$ (c) A – B (d) None of these

7) How many inputs are there in a full subtractor circuit? :

(a) 3 (b) 2 (c) 1 (d) None of these

8) The difference of a full subtractor circuit is given by an expression like:

(a) $X \oplus Y + Z$ (b) $X + Y \oplus Z$ (c) $(X \oplus Y).Z$ **(d)** $X \oplus Y \oplus Z$

9) A full subtractor can be formed by using two half subtractors and a/an:

(a) NAND gate (b) NOR gate **(c) OR gate** (d) AND gate

10) The number of AND gates in a full adder circuit (FA using 2 HA) are:

(a) 1 **(b) 2** (c) 3 (d) 0

11) A full adder can be formed by using two half adders and a:

(a) NAND gate (b) NOR gate **(c) OR gate** (d) AND gate

12) The number of NOT gates in a full adder (FA using 2 HA) circuit is:
(a) 0 (b) 1 (c) 2 (d) None of these

13) 1 + 1 + 1 will have a carry – out:
(a) 10 (B) 11 **(c) 1** (d) 0

14) Full adder is a _____ circuit:
(a) Sequential (b) Odd (c) Even **(d) Combinational**

15) 0 + 1 + 1 will have a carry – out:
(a) 10 (B) 11 (c) 1 **(d) 0**

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