Working Principle of Digital Logic

Model Exam Question paper - 1

11th Standard

Computer Science

Reg.No. : | | | | | | |

I. Answer all the questions.

II. Use blue pen only.

Time : 01:00:00 Hrs

Total Marks : 40

Part-A

10 x 1 = 10

1) Which is an elementary building block of the digital circuit?

(a) Gate (b) Digital gate (c) Logic gate (d) Physical gate

2) The fundamental logic gates are.....

(a) five (b) four (c) two (d) three

3) How many possible inputs to AND gate?

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

4) Which one of the following gate is called logical inverter?

(a) NAND (b) XOR (c) NOR (d) NOT

5) NOR gate can be replaced by.....

(a) OR (b) AND (c) NAND (d) Bubbled AND

6) The output of XOR gate is.....

(a) $C = \bar{A}.B + A.\bar{B}$ (b) $C = \bar{A}.\bar{B} + A.B$ (c) $C = \overline{\overline{A.B} + A.B}$ (d) $C = \overline{\overline{A+B} + \overline{A.B}}$

7) The output of XNOR is.....

(a) $C = A \otimes B$ (b) $C = \bar{A} \oplus \bar{B}$ (c) $C = \overline{\overline{A \oplus B}}$ (d) $C = \overline{\overline{A \odot B}}$

8) Which can be used to implement the fundamental logic gates?

(a) XOR (b) NAND+NOR (c) XNOR (d) Bubbled AND gate

9) To use logic converter, an individual circuit is limited to.....inputs and.....output.

(a) 8,0 (b) 8,1 (c) 7,0 (d) 7,1

10) A simplest way to convent a truth table to a Boolean function is.....

(a) NOR of minterms (b) OR minterms (c) OR of maxterms (d) XOR of minterms

Part-B

10 x 2 = 20

11) What is a logic gate?

12) List the fundamental logical gates.

13) Why are NAND and NOR gates called universal gates?

14) How can AND gate be realized using NOR gate?

15) Give the truth table of XOR gates for two inputs.

16) What is synchronous sequential circuit?

17) What is electronic workbench?

18) What is a logic converter?What purpose does it serve?

19) Write the symbol of AND gate and OR gate.

20) Define OR gate

Part-C

2 x 5 = 10

21) Realize the Boolean function to a logic circuit: $E = \overline{A}B + \overline{B}C + ABC$

22) How will you convert the Boolean $D = (A.B) + \overline{C}$ function into a truth table?

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