Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University) Coimbatore-641 043

Bachelor's Degree Examination – November 2018

I Semester

Class : I BCA **Time : 3 hours**
Major : Computer Applications **Max. Marks: 100**

18BCA01 – DIGITAL PRINCIPLES

Part-A **10 x 1=10**

Choose the correct answer

1. Identify the universal gate.

a. AND b. OR c. NOT d. NAND

2. Find the basic gate.

a. NOT b. NOR c. NAND d. XOR

3. Choose the commutative law

a. A.B=B.A b. A+B=A.B c. A.B=A.B d. A.B=A+B

4. Select the identity law

a. A.1=1 b. A.1=A c. A+0=0 d. 0+A=0

5. Identify the role of multiplexer

a. one input and many outputs
b. one input and one output
c. many inputs and one output
d. many inputs and many outputs

6. Which is not a combinational logic circuit?

a. Demultiplexer b. Multiplexer c. Flip flop d. Encoder

7. Find the flip flop used for counters and shift registers

a. JK b. D c. T d. RS

8. Choose the flip flop used for toggle purpose

a. JK b. D c. T d. RS

9. Select the volatile memory

a. ROM b. RAM c. PROM d. EPROM

10. Which is called as Ripple counter?

a. asynchronous b. synchronous c. ring d. mod

Part B **5 X 6=30**

Answer the following

Answer should not exceed 400 words or two pages

11.a. Write short notes on code conversion.

(or)

11.b. Draw NAND and NOR gates with truth tables.

12.a. Discuss about K-map.

(or)

12.b. Prove De Morgan's theorem 1 and 2.

13.a. Draw 2-to-4 decoder and explain its function.

(or)

13.b. Explain multiplexer with circuit.

14.a. Define flip flops and its uses.

(or)

14.b. Draw D flip flop diagram and explain.

15.a. Sketch the types of ROM and its functions.

(or)

15.b. List the memory addressing and its uses.

Part C **5 x 12=60**

Answer the following

Answer should not exceed 800 words or four pages

16.a. Interpret $(ABCD)_{16}$, $(F011)_{16}$ and $(FFFF)_{16}$ into binary.

(or)

16.b. Review the logic gates and tabulate their truth values.

17.a. Describe Boolean Laws.

(or)

17.b. Sketch the half-adder and full-adder with relevant information.

18.a. Apply encoder concept for 8-to-3 lines and write detail.

(or)

18.b. Illustrate demultiplexers with neat diagram.

19.a. Compare R-S, J-K and D flip flops.

(or)

19.b. Inspect the types of shift registers with TT.

20.a. Analyze the Asynchronous counters.

(or)

20.b. Demonstrate the synchronous counters.

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