JANATA COLLEGE, Serfanguri

BCA 3rd Sem Sessional Examination, 2022

Subject : Digital Logical Fundamentals

Paper code: C6

Total marks : 20 Time : 1 hours

Q.1. Answer the following questions( Any five): 1 X 5 = 5

a) A(A+B) = ?

i) AB ii) 1 iii) (1+AB) iv) A

b) The NOR gate output will be high if the two inputs are

i) 0 0 ii) 0 1 iii) 1 0 iv) 1 1

c) Which of the following is universal logic gate

i) OR ii) AND iii) NAND iv) XOR

d) Any negative number is recognized by its

i) LSB ii) MSB iii) Bits iv) Nibble

e) Whose operations are more faster among the following

i) Combinational Circuit ii) Sequential Circuit

iii) Latches iv) Flip-Flops

f) In Boolean algebra, the OR operation is performed by which properties.

i) Associative properties. ii) Commutative properties.

iii) Distributive properties. iv)All of the above

g) A + A = ?

i) 1 ii) 0 iii) A iv) A

Q.2. Answer the following questions ( Any five) : 2 X 5 = 10

a) What are logic gates? Give some examples.

b) What are multiplexers?

c) What is truth table?

d) What is a flip-flop?

e) Draw a NAND gate and give truth table for NAND gate.

f) What is decoder and encoder?

g) Give the truth table and symbol for X-OR logic gate.

h) What is subtractor?

Q.3. Answer the following questions (Any one) 1 X 5 = 5

a) What are universal gates? Explain how basic gates can be realize using NAND and OR gate.

b) Design and draw the logic diagram of full adder.

c) Discuss various type of Logic gates. Also discuss their applications.

d) Simplify the following Boolean function:

a) X’Y(Z’+YZ) + X(W+YZ)

b) (X+Z’) (Y+Z’)