

Roll No.

Total No. of Pages : 02

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B.Sc.(IT) (Sem.-2)
DIGITAL CIRCUITS & LOGIC DESIGN

Subject Code : BSIT-204

M.Code : 72727

Date of Examination : 12-07-22

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1) Answer briefly :

- a) What is De-Morgan's theorem?
- b) Define NAND and NOR Gates.
- c) What do you mean by sequential circuits?
- d) Define ALU.
- e) Define Half Subtractor.
- f) What is difference between a multiplexer and encoder?
- g) What do you mean by clock?
- h) What is a latch?
- i) Define modulus of counter.
- j) What is a priority encoder?

SECTION-B

- 2)
 - a) Illustrate the operation of basic flip-flop using NOR gates.
 - b) Explain excitation tables for JK and T flip-flops.
- 3)
 - a) Classify the different types of Counters.
 - b) Explain the operation of the 4-bit asynchronous counter.
- 4) Explain expanded form and canonical form of Boolean expression using example.
- 5) Explain full adder with proper logic circuit diagram.
- 6) What is a Multiplexer? Draw a logic diagram of 8×1 lines multiplexer with enable HIGH line with its truth table.
- 7) Simplify the following Boolean expression using Karnaugh map method.
 - a. $F = X'YZ + X'YZ' + XYZ' + XY'Z$
 - b. $F(x,y,z) = \Pi(0,1,4,5)$.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.