

S-755

Total Pages : 3

Roll No. -----

MIT(CS)-302

Introduction Digital System

M.Sc. Cyber Security (MSCCS)

3rd Semester, Examination 2022(Dec.)

Time: 2 Hours

Max. Marks: 70

Note : This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein.

Section – A

(Long Answer – type questions)

Note: Section 'A' contains Five (05) long-answer-type questions of Nineteen (19) marks each. Learners are required to answer any two (02) questions only.

[2 x 19 = 38]

P.T.O.

- Q.1. What are the uses of number system? Explain with an example, what are the rules to convert a Gray coded number into a straight binary number?
- Q.2. What is a truth table? Draw the logic diagram, graphical symbol and truth table for a 2-input XOR and NAND gate.
- Q.3. Explain different types of counters?
- Q.4. Define K-map. Explain with example the procedure for minimization of a Boolean function through a K-map.
- Q.5. What is Memory? Explain different types of memory. With example define memory size, word length and memory address.

Section – B

(Short-answer-type questions)

Note: Section 'B' contains Eight (08) short-answer-type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only.

[4 x 8 = 32]

- Q.1. Explain Representation of Negative Numbers with example.
- Q.2. Explain DeMorgan's Law with help of example.
- Q.3. Explain the functioning of an Encoder and Decoder.
- Q.4. What is flip-flop? Explain working of RS flip-flop.
- Q.5. Define circuit. Explain how sequential circuit differs from combinational circuit?
- Q.6. Explain different types of Boolean operators with example.
- Q.7. Describe the Principle of Quine-McClusky Method with an example.
- Q.8. Explain the function of a multiplexer. Draw the logic diagram of 4 –to-1 multiplexer.
