

Tribhuvan University
Institute of Science and Technology
2065

Bachelor Level/ First Year/ Second Semester/ Science
Computer Science and Information Technology (CSc. 151)
(Digital Logic)
hours.

Full Marks: 60
Pass Marks: 24
Time: 3

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Long Answer Questions:

Attempt any TWO questions:

(10x2=20)

1. Draw a block diagram, truth table and logic circuit of a 16 x 1 multiplexer and explain its working principle.
2. Explain the 4 bit ripple counter and also draw a timing diagram.
3. Design the full subtractor circuit with using Decoder and explain the working principle.

Short Answer Questions:

Attempt any EIGHT questions:

(8x5=40)

1. Design a half adder logic using only NOR gate.
2. Convert the following decimal numbers into hexadecimal and octal number. a) 304 b) 224
3. Describe the three Variable K-map with example.
4. Design the Decoder using Universal gates.
5. What is combinational logic? What are its important features.
6. Describe the clocked RS flip-flop.
7. What do you mean by triggering of flip flop?
8. What are the shift Register operations?
9. Describe the Ripple counter.
10. Write short notes on:
 - a. Registers.
 - b. Digital.
 - c. EBCDIC.