CSc.151,2074

Tribhuvan University Institute of Science and Technology
2074

Bachelor Level I First Year/ Second Semester/ Science — Full Marks: 60
Computer Science and Information Technology (CSc 151) — Pass Marks: 24
(Digital Logic) — Time: 3 hours.

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

Long Answer Questions:

Attempt any two question (2x 10=20)

1. Differentiate between encoder and decoder. Design a 3 to 8 line decoder and explain its working principles.
2. Differentiate between ROM and PLA. Explain PLA with block diagram.
3. What do you mean by ripple counter? Explain binary ripple counter.

Short Answer Questions:

Attempt any eight questions. (8x5=0)

1. What are the basic properties of Boolean state the associative property of Boolean algebra?
2. Define Flip flop. Explain the operations of M flip slop.
3. What is master-slave flip-slop? Define race condition.
4. Design a half adder logic diagram using NASD gates only.
5. Design a 2 bit magnitude comparator and also explain the operation of 4 to 8 decoder.
6. Comparison between synchronous and asynchronous sequencial circuits. What are the step to design an asynchronous sequencial circuit?
7. Explain Binary up down counter.
8. Explain the serial in parallel out and 'parallel in serial out shift counters.
9. Explain the decimal adder.
10. Write short notes on:
    a) flip flop
    b) Johnson's counter