Program: BCA Online
Course: Digital Electronics
Semester: 3
Internal Assignment: 1
Assignment Marks: 30

- All Questions are compulsory.
- All answers to be explained in not more than 500 words. Use relevant examples and illustrations as far as possible.
- All answers to be written individually. Discussion and group work are not advisable.
- Students are free to refer to any books/reference material/website/internet for attempting their assignments but are not allowed to copy the matter as it is from the source of reference.
- Students should write the assignment in their own words. Copying of assignments from other students is not allowed.

Theory Questions:

1. Give the difference between Combinational circuit and Sequential Circuits.

2. Convert the hexadecimal number 3A7F to its binary, octal, and decimal equivalents.

3. Simplify the following Boolean expression using the 4-variable K-map

   $$f(A,B,C,D)=\sum m(0,2,3,6,7,8,10,13,15)$$

Practical Questions:

1. Implement a Half adder and full adder in Logisim / CircuitVerse

2. Implement a 8:1 Multiplexer in Logisim / CircuitVerse

3. Implement a J-K Flipflop in Logisim / CircuitVerse