20.08.2019

Time – 1 hour   **Max Marks-30**

PART A

Answer any FIVE questions   **5*6=30**

1. Explain the different types of number systems with an example of each.
2. a. Convert the octal number $(2157)_8$ to hexadecimal.   [3+3]
   b. Convert the binary number$(11100011)_2$ to decimal.
3. a. Subtract72 from 35 using 1's complement.   [3+3]
   b. Subtract 40 from 27 using 2's complement.

4. Explain the working of full adder in detail .

5. What is sum of product form? Solve using K Map

   $F(X\ Y\ Z) = \sum(0,2,4,6,5)$

6. Define the following logic gates and explain the function of each

   a. XOR gate

   b. XNOR gate

7. a. State and prove De Morgan's theorem.   [3+3]

   b. Simply the following equation using De Morgan's theorem

   $(A+ A'\ B)(A+ B')$