**TUTORIAL – 1**

**UNIT - 1**

**DIGITAL ELECTRONICS AND DESIGN ASPECT (TEC- 302)**

1. **Encode the data bits 1101 into seven bit even parity hamming code.**
2. **Express the following decimal numbers in sign and magnitude, 1’s and 2’s complement representations.**
3. **-45**
4. **56**
5. **Using 9’s and 10’s complement arithmetic , find**
6. **864 – 352**
7. **22 ­­ – 54**
8. **Convert the following gray code numbers to binary numbers**
9. **1110**
10. **101010**
11. **Convert the following binary numbers to gray code equivalent**
12. **1010**
13. **(54)BCD**
14. **Simplify the Boolean function F(x, y, z) = ∑(1,3,5,9,11,13) in**
15. **SOP**
16. **POS**
17. **Minimize the following Boolean function by using k map**

**F(A,B,C,D,E,F) = ∑m (0,1,3,7,8,9,11,15)**

1. **For the logic expression , Y = (+ B+C)(A+B)D**
2. **Realize this using AND,OR,NOT gates and**
3. **Realize using NOR gates only**
4. **Explain the difference between prime implicant and essential prime implicant.**
5. **Perform the following conversions :-**
6. **(562.3) into octal**
7. **1101101001.1010 to octal**
8. **(2DA.1B5)16 to binary**
9. **(AB.12)16to decimal**