V.P. & R.P.T.P SCIENCE COLLEGE
First Internal Test
US03CELE-02

Date: 06/10/15
3:00 to 4:30 pm
Total Marks 25

Multiple choice questions: **3 marks**

1. $98_{16} + AB_{16} =$
   (i) 271_{16}
   (ii) $16D_{16}$
   (iii) 171_{16}
2. The Gray code for binary code 11001101_2 is
   (i) 11100010
   (ii) 10110111
   (iii) 10101011
3. Demorgan's theorem is break the line,
   1) Change the number
   2) Change the sign
   3) Change the operator

Q2 : Answer in short: (Any two) **4 marks**

1. Subtract $1A92_{16}$ from $A7683_{16}$
2. State De'Morgan's theorem and state its utilities.
3. Define Reflective code and Sequential code and give examples.

Q3 : Do as directed : **6 marks**

(i) Multiply 1110 by 1010 using Computer Method
(ii) Multiply $94EC_{16}$ by $A5_{16}$

OR

Q3 : Do as directed : **6 marks**

(i) Multiply 1001 by 101 using Computer Method
(ii) Add 28 to -154 using 2's complement.

Q4 : Do as directed : **6 marks**

(i) Add 247.6 to 359.4 in XS3 code
(ii) Add 1356 to 6573 using BCD code

OR

Q4 : Do as directed : **6 marks**

(i) Subtract 27.8 from 57.6 in XS3 code.

(ii) Add 1935 to 7565 using BCD code.

Q5 : (i) Reduce the Boolean Expression using Boolean Laws **3 marks**

$AB + \overline{AC} + A\bar{B}C(AB + C)$

(ii) Draw transistorized circuit for two input AND gate. Explain its **3 marks**

Working for input conditions A=B=1 and A=B=0

OR

Q5 : (i) Reduce the Boolean Expression using Boolean Laws **3 marks**

$\overline{\overline{A\bar{B} + ABC} + A(B + \bar{A}B)}$

(ii) Construct AND, OR and NOT gate using NAND gate. **3 marks**

********** Best of Luck**********