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

**Date: 11/10/14**
**1:00 to 2:30 pm**
**Total Marks 25**

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**Multiple choice questions:** **3 marks**

1. $93_{16}$ + $DE_{16}$ =
   (i) $271_{16}$
   (ii) $161_{16}$
   (iii) $171_{16}$
2. XS3 code is
   (i) weighted Binary code
   (ii) Reflective code
   (iii) None of the above
3. By forming quadret we can reduce ----------variables in Karnaugh mapping
   (i) 2 variables
   (ii) 3 variable
   (iii) 1 variable

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

1. Subtract $1AB5_{16}$ from $2BAA_{16}$
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 $1AB5_{16}$ by $AA_{16}$

OR

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

(i) Multiply 1100 by 1000 using Computer Method
(ii) Add -25 to -115 using 2's complement.

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

(i) Add 37 to 28 in XS3 code

(ii) Add 1356 to 6573 using BCD code

**OR**

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

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(i) Add 247.6 to 359.4 in XS3 code

(ii) Add 1935 to 7565 using BCD code.

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

$$\overline{\overline{ABC + \bar{A}\,\bar{B} + BC}}$$

(ii) Find the POS and SOP form of $Y = \sum m(0,1,3,6,7,8,9,13,15)$ **3 marks**

OR

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

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

(ii) Reduce and implement in NAND logic **3 marks**

$Y = \sum m(2,3,5,7,9,11,12,13,14,15)$

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