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Roll No

EC - 403**B.E. IV Semester**

Examination, June 2013

Digital Electronics**Time : 3 Hours****Maximum Marks : 70/100****Note:** i) Attempt one question from each unit.

ii) All questions carry equal marks.

Unit - I

1. a) Convert the following :

i) $(5976)_{10} = (\quad)_{\text{Excess 3}}$

ii) $(1011010111)_2 = (\quad)_{\text{gray}}$

iii) $(1000101.111)_2 = (\quad)_{10}$

iv) $(795.23)_{10} = (\quad)_8$

b) Find the minimal sum of products for the Boolean expression $f = \sum(1, 2, 3, 7, 8, 9, 10, 11, 14, 15)$ using the Quine-McClusky method.**OR**

2. a) Using k map method simplify the following function, obtain its

i) Minimum sum of product and

ii) Minimum product of sum.

$$f = \sum(1, 2, 5, 6, 7, 10, 14, 15)$$

b) Simplify the following function.

i) $A\bar{B}C + (\bar{B} + \bar{C})(\bar{B} + \bar{D}) + \overline{A + C + D}$

ii) $ABCD + AB(\bar{C}\bar{D}) + (\bar{A}\bar{B})CD$

Unit - II

3. a) Realise the following function as
i) Multilevel NAND NAND gate network and
ii) Multilevel NOR NOR network.

$$f = \overline{A}BC + B(C + \overline{D}) + \overline{AD}$$

- b) Design and implement look ahead carry generator.

OR

4. Realise the following Boolean function using multiplexer.

$$f = \overline{BCD} + BD + (\overline{AC} + B) + ABC$$

Unit - III

5. a) Discuss the working of Bistable multivibrator using 555 timer.
b) Discuss the working of master slave flip flop.

OR

6. Design MOD-7 counter using J-K flip flop.

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Unit - IV

7. Explain the following:

- a) EEPROM
b) RAMBUS

OR

8. Discuss the following:

- a) PAL
b) DRAM

Unit - V

9. Explain the following logic families

- i) TTL
ii) CMOS.

OR

10. How is interfacing between MOS and TTL done.
