

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086.
(For candidates admitted during the academic year 2008-09)

SUBJECT CODE : PH/MC/EL14

B.Sc. DEGREE EXAMINATION NOVEMBER 2008
BRANCH III - PHYSICS
FIRST SEMESTER

REG. No. _____

COURSE : MAJOR – CORE
PAPER : ELECTRONICS I
TIME : 30 MINS.

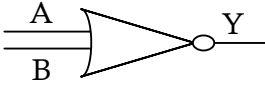
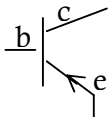
MAX. MARKS : 30

SECTION – A

TO BE ANSWERED IN THE QUESTION PAPER ITSELF

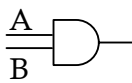
ANSWER ALL QUESTIONS: (30 x 1 = 30)

I CHOOSE THE CORRECT ANSWERS:

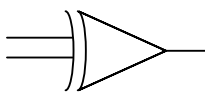
- Nortons theorem is a
a) current source b) voltage source c) Resistance source d) Capacitor source
- Power delivered to the load is
a) IR b) I^2R c) I.V d) I.L
-  The output of this gate is
a) $Y = \overline{A.B}$ b) $Y = \overline{A + B}$ c) $Y = A + B$ d) $Y = A B$
- P O S represents
a) product of sum b) sum of product c) product of scale d) sum of scale
- K map represents
a) karnaugh map b) Kelin map c) Kirchoff's map d) kinetic map
-  represents
a) pnp transistor b) npn transistor c) pnpn d) npnp transistor
- For a capacitor the charge is directly proportional to
a) potential b) resistance c) charge d) vacuum space
- Monolithic means
a) on a single stone b) on a double base
c) on a triple base d) on a multiple base

9. Modulus 10 counts from
 a) 0 to 9 b) 0 to 10 c) 0 to 11 d) 0 to 12
10. The BCD of decimal 8 is
 a) 0000 1000 b) 0000 0000 c) 0100 0000 d) 0111 0111
11. $A + 1 =$
 a) 1 b) 0 c) -1 d) 2
12. $\overline{AB} + \overline{AB}$ is
 a) \overline{A} b) A c) \overline{B} d) B
13. Sum expression for half adder is
 a) $S = \overline{A}B + A\overline{B}$ b) \overline{AB} c) $A\overline{B}$ d) $(\overline{AB}) \cdot (A\overline{B})$
14. The sum of 1001 and 1000 is
 a) 10001 b) 0001 c) 0101 d) 1000
15. LED represents
 a) light emitting diode b) light equating diode
 c) light equalizer diode d) light diode

II STATE WHETHER TRUE OR FALSE:

16.  is a AND gate.
17. $\overline{A}B + A\overline{B}$ is sum of product expression.
18. K map gives simplified form of truth table.
19. Two half adder makes one full adder.
20. Shift register shift the digits by one.

III FILL IN THE BLANKS:

21. Various network theorems are _____, _____, _____.
22. Loop is as _____.
23. Thevinin theorem is a _____ source.
24.  represents a _____ gate.
25. BCD represents _____.

IV ANSWER IN ONE OR TWO SENTENCES:

26. What is energy source.

27. State Nortons theorem.

28. State Demorgan's theorem.

29. What is a down counter.

30. What is SSI.

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B.Sc. DEGREE EXAMINATION NOVEMBER 2008
BRANCH III - PHYSICS
FIRST SEMESTER

COURSE : MAJOR – CORE
PAPER : ELECTRONICS I
TIME : 2 ½ HOURS

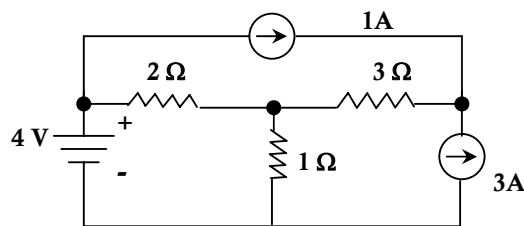
MAX. MARKS : 70

SECTION – B

ANSWER ANY FIVE QUESTIONS:

(5 x 5 = 25)

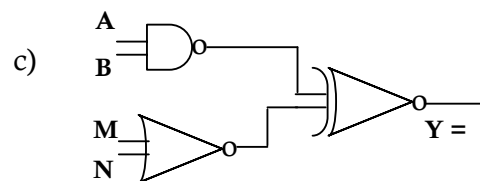
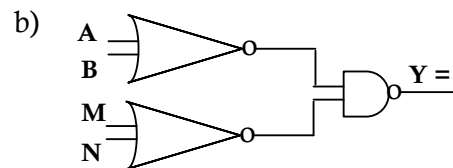
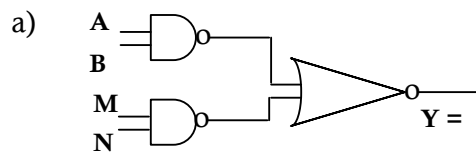
1. Using Thevenin's theorem, find current in $1\ \Omega$ resistor in the circuit shown in fig.



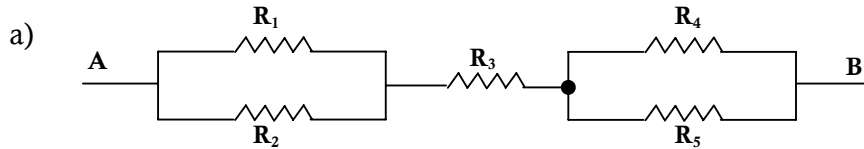
2. What are K-map. Simplify using K-map.
 $Y = F(A, B, C) = \Sigma (1, 6, 7)$.

3. Show that
- $\overline{A + B + C} = \overline{A} \cdot \overline{B} \cdot \overline{C}$
 - $\overline{A \cdot B \cdot C} = \overline{A} + \overline{B} + \overline{C}$
 - $\overline{\overline{A + B + C}} = (A + B) + C$

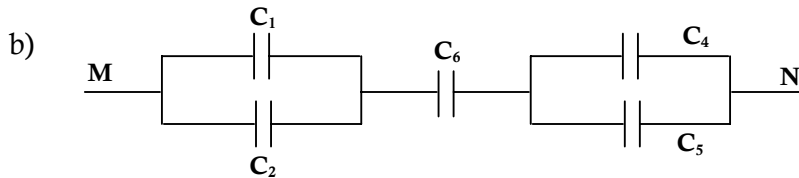
4. Find the output of the following circuit



5. Find the effective resistance between A and B.



Find the effective capacitance between M and N.



6. What are counters, Explain the working of binary ripple counter.

7. Give the Max term (POS) and Min term (SOP) for the following truth table.

A	B	C
0	0	0
0	0	1
0	1	0
0	1	1
1	0	0
1	0	1
1	1	0
1	1	1

SECTION – C

ANSWER ANY THREE QUESTIONS:

(5 x 15 = 45)

8. Explain Thevenin's theorem with an example.
9. Explain the working of half and full adder with neat diagrams.
10. What are different types of shift register. Explain.
11. Describe the fabrication of Integrated circuit.
12. Explain with neat diagram construction and working of decade counter.

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