



Code No. : 5140/O

FACULTY OF ENGINEERING
BE 2/4 (ECE) II Semester (Old) Examination, May/June 2012
PULSE, DIGITAL AND SWITCHING CIRCUITS

Time : 3 Hours]

[Max. Marks : 75

Note : Answer all questions of Part A. Answer five questions from Part B.

PART – A

(25 Marks)

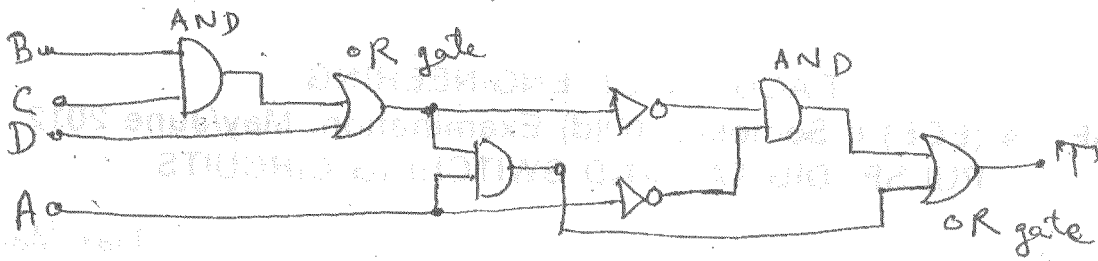
1. Sketch a pulse voltage response of a High Pass RC circuit. 2
2. Prove that a Low Pass RC circuit can function as an integrator. 3
3. Match the following : 2

A	B
a) As table multivibrator	i) FLIP – FLOP
b) Bistable multivibrator	ii) Generation of square wave
c) Monostable multivibrator	iii) Free running M.V.
d) Schmitt trigger	iv) One shot M.V.
	v) D.C. Restorer
4. Draw the circuit of a Relaxation oscillator. 3
5. Determine the canonical SOP representation of the function $f(x, y, z) = z + (\bar{x} + y)(x + \bar{y})$ 3
6. Simplify the following algebraic expression $f(w, x, y, z) = xy + wxy\bar{z} + \bar{x}y$ 2
7. Distinguish between Prime implicants and essential prime implicants. 3



8. Express T as a function of A, B, C, D.

2



9. Convert a JK to T flipflop.

2

10. Write the difference between combinational circuit and sequential circuit.

3

PART - B

(50 Marks)

11. a) Compare clippers and clampers.

5

b) Derive a condition for a perfect attenuation in a compensated attenuator.

5

12. a) Explain the schmitt trigger circuit with the help of circuit diagram and transfer characteristic.

7

b) What are the application of schmitt trigger ?

3

13. Minimize the function using Tabular method.

$$f(A, B, C, D) = \sum m(2, 4, 6, 8, 9, 10, 12, 13, 15)$$

10

14. a) Explain Hazard in digital circuit with example.

4

b) Determine which of the following function is symmetric and identify its a number and variables of symmetry.

3

a) $f_1(A, B, C, D) = \sum m(3, 7, 14)$

3

b) $f_2(A, B, C, D) = \sum m(0, 1, 3, 5, 8, 10, 11, 12, 13, 15)$

15. a) Write the differences between synchronous and asynchronous counter.

3

b) Design a modulo-8 asynchronous up counter using JK flipflop. Draw the output wave form.

7

16. a) Write the Truth Table of full adder.

3

b) Design a code converter which converts BCD to Excess-3 code.

7

17. Write short notes on any two:

a) Transistor as a switch.

5

b) Astable multivibrator.

5

c) SCR.

5