Code No. 6061 / M

FACULTY OF ENGINEERING

B.E. 2/4 (ECE) II – Semester (Main) Examination, June 2014

Subject: Pulse, Digital and Switching Circuits

Time: 3 Hours **Max.Marks: 75**

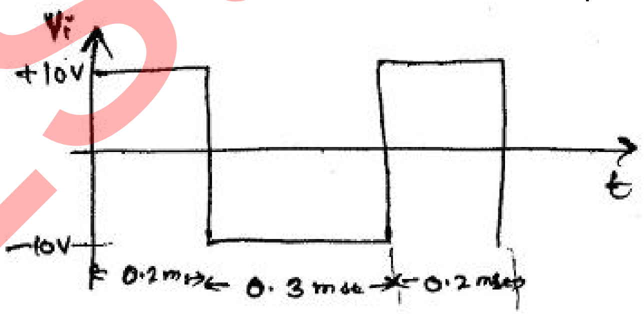
Note: Answer all questions from Part A. Answer any five questions from Part B.

PART – A

1 Explain the need for attenuator. (2)
2 Explain the responses of RC integrator for step input at different time constants. (3)
3 Compare the performance of series clipper with shunt clipper. (2)
4 What is hysterisis in a Schmitt Trigger Circuit? (2)
5 Give the different names and applications of mono stable and astable multivibrators. (3)
6 Define prime implicants and essential prime implicants. (2)
7 Implement full adder circuit by using half adders with other gates. (3)
8 Explain static hazard free situation with example. (3)
9 Distinguish between melay and moore machine. (3)
10 Define a decoder and mention its applications. (2)

PART – B

11 The input wave form shown in Fig. is applied to a low pass RC circuit at t=0. Sketch the O/P voltage from t=0 to t=1 msec. The low pass RC circuit uses R=100 Ω and C=0.1 μF. The input signal source resistance is 1kΩ. Assume initial capacitor voltage zero. (10)



12 Explain the effect of R_f and R_s on clamper circuit and derive its expression for output voltage levels for the square wave input. (10)
13 (a) Explain the working of a Regenerative Comparator. (6)
(b) Draw and explain the sweep circuit using UJT. (4)
14 Simplify the following expression of F(A, B, C, D, E) = ∈m (0, 1, 2, 3, 4, 5, 12, 13, 14, 26, 27, 28, 29, 30) using Quine McClusky method. (10)
15 (a) Design a modulo-3 counter using D Flip-flop that count as 01$\rightarrow$10$\rightarrow$11. The unused state '00' goes to '01' at next clock trigger. (5)
(b) Design an asynchronous mod 5 counter using JK Flip-flops. (5)
16 Design a sequence generator with minimum no. of flip-flops that generates sequence "10110001" repetitively. (10)
17 Write short notes on: (10)
a) Flip-flop conversion b) Time base generators c) Compensated attenuator.

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