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Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech.(ECE)/(ETE) (2011 onwards) (Sem.-4)**  
**PULSE WAVE SHAPING AND SWITCHING**

Subject Code : BTEC-405

Paper ID : [A1193]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- (a) Define the condition for low pass filter to act as a good integrator.
- (b) What is free running multivibrator?
- (c) Define various transistor switching times.
- (d) Define clamping circuit theorem.
- (e) Why monostable multivibrator is called a delay circuit?
- (f) Define linear waveshaping with suitable examples.
- (g) Calculate the current in  $200\Omega$  resistance when it is connected in series with silicon diode and 5V dc?
- (h) Sketch input output characteristics of Schmitt trigger circuit
- (i) Define lower 3dB frequency.
- (j) List the advantages of emitter coupled astable multivibrator over collector coupled.

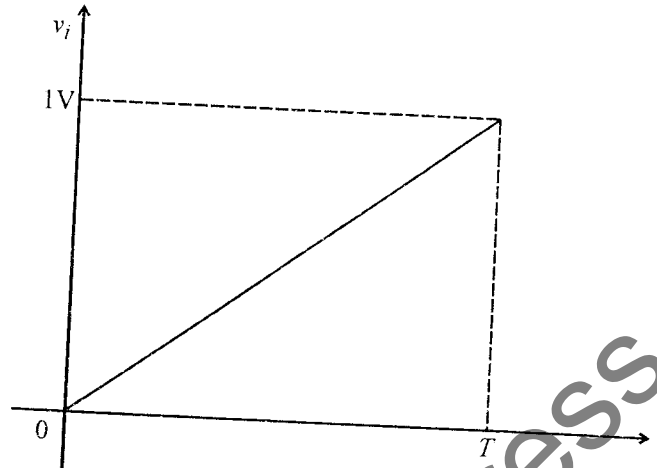
**SECTION-B**

2. Draw and explain the working of Emitter coupled monostable multivibrator. What are its advantages?

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3. Explain how Schottky diode is useful for reducing storage time.
4. Explain RC differentiation circuit with suitable mathematical equations and also explain the criterion for good differentiation.
5. A ramp signal is applied to high pass RC circuit. Draw to scale the output waveforms for the cases  $T = RC$ ,  $T = 0.2RC$ ,  $T = 5RC$



6. Explain the role of feedback in electronic circuits. Also explain the effect of application of Trigger input at the base of ON transistor.

#### SECTION-C

7. Discuss the pulse voltage and step voltage response of series RL circuit. Also calculate the time constant  $T$  of RL circuit. Give variation of current ratio  $i/I_0$  with time.
8. Discuss working of diode and transistor differentiator comparator with the help of neat circuit diagram. Also draw the input and output waveforms.
9. Write short notes on :
  - (a) Complementary Transistor Astable multivibrator.
  - (b) Attenuator.