

#### www.FirstRanker.com

www.FirstRanker.com

Roll No.												Total No. of Pages: 02	2	
												. c.a. no. o agoo		

Total No. of Questions: 09

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

Subject Code: BTEC-405 M.Code: 57597

Time: 3 Hrs. Max. Marks: 60

### INSTRUCTIONS TO CANDIDATES:

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.
- 4. Any missing data can be assumed appropriately.

### SECTION-A

## 1. Answer briefly:

- a) Differentiate between RC low pass and RC high pass filter.
- b) Write the output voltage expression and draw input and output waveform for the input voltage (V<sub>m</sub>sinωt) applied to a pure inductor.
- c) What is the role of feedback in electronics circuits.
- d) What do you mean by self bias bistable multivibrator?
- e) What is the difference between average and RMS values.
- Define resolution time in multivibrator.
- g) Define switching time in PN diode.
- Define UTP and LTP.
- Differentiate between linear and non-linear wave-shaping circuits.
- List the applications of attenuator.

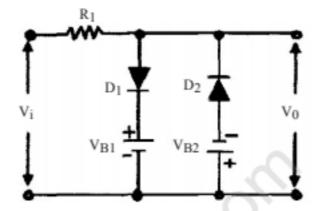
1 M-57597 (S2)-1548





### SECTION-B

Q2. The fig shows double Clipper circuit. Determine its output waveform. Assume diode drop of 0.7 V with sinusoidal input with ± 20 V. Also V<sub>B1</sub> and V<sub>B2</sub> are 4V and 9V respectively.



- Q3. Explain the working of bistable multivibrator as "T" flip flop?
- Q4. State and prove Clamping Circuit Theorem.
- Q5. Explain the working of Schmitt trigger.
- Q6. How the BJT work as switch?

# SECTION-C

- Q7. With waveforms, derive the expression for the frequency of oscillation of an astable multivibrator.
- Q8. Derive the response of low pass RC circuit for pulse input voltage and draw the waveform.
- Q9. Explain any two with necessary diagrams :
  - a) Passive and active elements
  - b) Positive and negative clamper
  - c) Diode comparator

NOTE: Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

2 M-57597 (S2)-1548

