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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (ECE) (2012 to 2017) (Sem.-4)
PULSE WAVE SHAPING AND SWITCHING
Subject Code : BTEC-405
M.Code : 57597

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS 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 have to attempt any FOUR questions.
3. 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**Answer briefly :**

1. Differentiate between low pass and high pass wave-shaping circuits.
2. Draw the response of high pass RC circuit to ramp wave input voltage.
3. List the applications of clamper circuits.
4. How does a Schottky Diode can be used for reducing Storage time?
5. The voltage ($V_m \sin \omega t$) applied to a pure inductor, write the output voltage expression and draw input and output waveform.
6. What do you mean by a stable multivibrator?
7. Define resolution time in multivibrator.
8. If the diode is made from germanium, how it will work as ideal switch?
9. Name the semiconductor devices that can be used as switch.
10. What is the application of triggering input at the base of ON transistor?

SECTION-B

11. The figure shows double Clipper circuit. Determine its output waveform. Assume diode drop of 0.7 V with sinusoidal input with ± 20 V. Also V_{B1} and V_{B2} are 10V and 8V respectively.

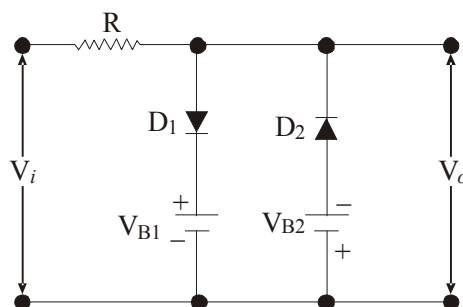


FIG.1

12. Derive the output equations and draw the output waveforms of a RC high pass circuit for the pulse wave signals as input.
13. Draw the circuit of bi-stable multivibrator with symmetrical collector triggering and explain it.
14. Explain the operation of Schmitt trigger with neat sketches, and derive the expressions for UTP and LTP.
15. What is the response of RL circuit for AC voltage?

SECTION-C

16. What is monostable multivibrator? Explain with the help of neat circuit diagram the principle of operation of monostable multivibrator, and derive the expression for pulse width. Draw the waveforms at collector and base of the both transistors.
17. What is diode comparator and describe the application of comparator.
18. Explain **any two** with necessary diagrams;
- Operation of a transistor as switch with its switching characteristics.
 - How a low pass circuit acts as an integrator?
 - Series and shunt Clipper

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.