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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-2 EXAMINATION – APRIL 2019

B.Tech 2nd Semester (ECE, CS&IT)

COURSE CODE: 10B11EC211 MAX. MARKS: 25

COURSE NAME: Basic Electronic Devices and Circuits

COURSE CREDITS: 4 MAX. TIME: 1HR 30 MIN

Note: All questions are compulsory. Carrying mobile phone during examinations will be treated as a case of unfair means.

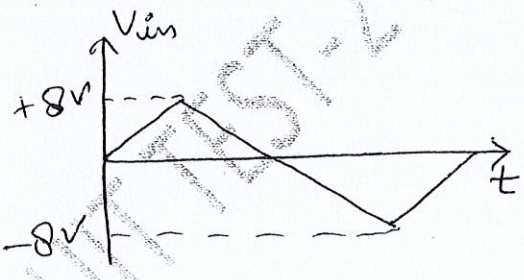
Q1. Derive an expression of ripple factor for full-wave rectifier with resistive load. **[3]**

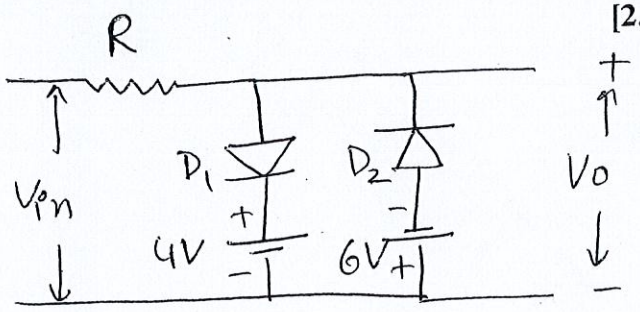
Q2. Compare half-wave, full-wave and bridge rectifier on the basis of efficiency, ripple factor, peak inverse voltage(PIV) and transformer utilization factor (TUF). **[2]**

Q3. An a.c. supply of 230 volts is applied to a half-wave rectifier circuit through transformer of turns ratio 5:1. Assume diode as an ideal diode. The load resistance is 300Ω. Find- **[2+1+1+1]**

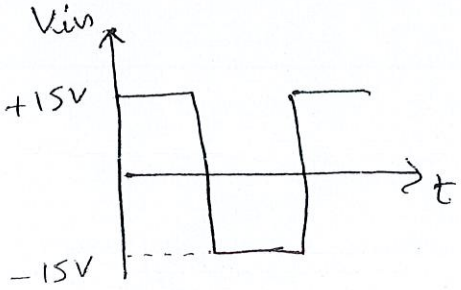
a. DC output voltage
b. Peak Inverse Voltage
c. Maximum value of the power delivered to the load
d. Average value of the power delivered to the load

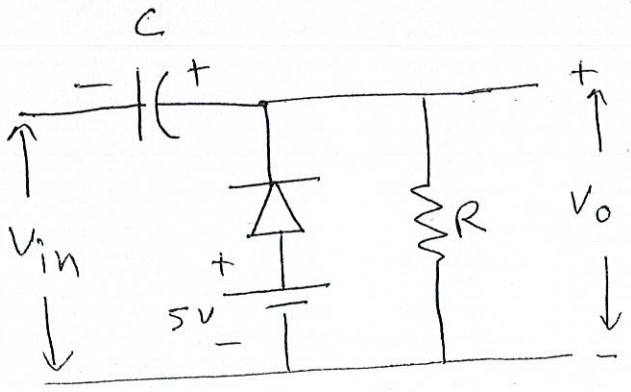
Q4. Sketch the output waveform with proper explanation for the given clipper circuit. Assume diode is an ideal diode. **[2.5]**





Q5. Explain the working of the given clamper circuit and draw the output waveform. Assume diode as an ideal diode. **[2.5]**

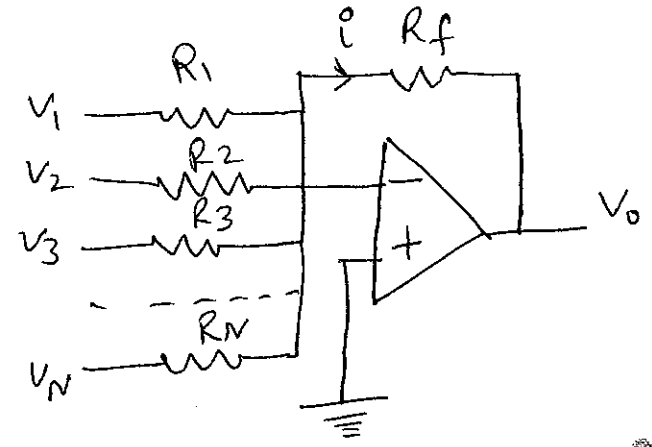




Q6. Write down the characteristics of ideal op-amp. And derive the expression of closed loop gain for non-inverting amplifier. **[2+3]**

Q7. Derive the expression of output voltage for following two circuits- **[2.5+2.5]**

(a)



(b)