

Roll No.

Total Pages : 3

BT-2/M-13

8222

**ELEMENTS OF ELECTRONICS
ENGINEERING**

(2004-2007)

Paper-EL-101-E

Time Allowed : 3 Hours

[Maximum Marks : 75

Note : Attempt five questions in all, selecting at least one question from each Unit. All questions carry equal marks.

UNIT-I

1. (a) Explain the working of LED with its construction and applications. 7
- (b) (i) For the Zener diode of Fig. 1 circuit, determine V_L , V_R , I_Z and P_Z .
- (ii) Repeat part (i) with $R_L = 3K\Omega$. 4,4

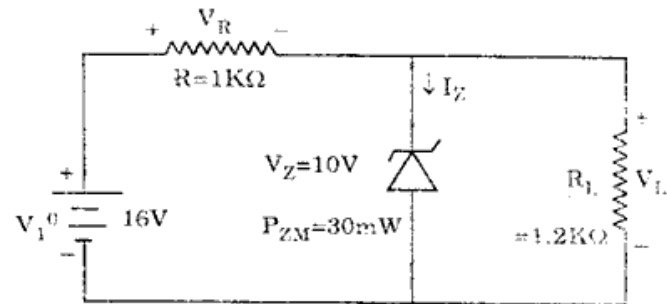


Fig. 1

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P. T. O.

2. (a) Explain the working of Full wave Rectifier circuit with its waveforms. Also explain PIV. 8,2
- (b) Determine V_0 for the network in Fig. 2 for the input indicated. Assume Ideal Diode. 5

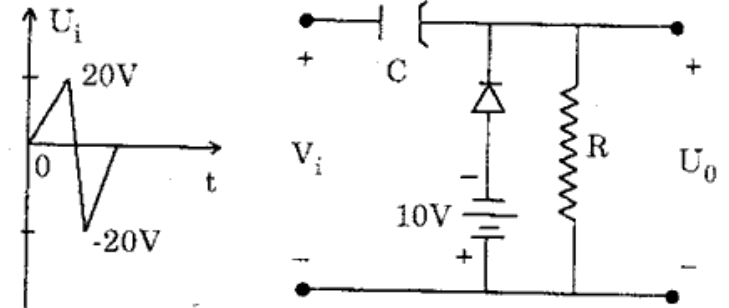


Fig. 2

UNIT-II

3. (a) Explain the working of Wien bridge oscillator. 5
- (b) Explain Early-Effect. 2
- (c) Explain the input and output characteristics of the common Emitter configuration. 8
4. (a) Explain the concept of Negative feedback in amplifiers with its general characteristics. 3,5
- (b) Explain the concept of a.c. load line of operating point selection. 4,3

UNIT-III

5. (a) Write down the various characteristics of Ideal Operational Amplifiers. 5
- (b) Explain the working of op-amp as a scalar. 5

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- (c) Explain the following terms :
- (i) Virtual Ground
 - (ii) CMRR
 - (iii) PSRR
 - (iv) Slew Rate
 - (v) Input Bias Current. 5
6. (a) Explain the working of the op-amp as a differentiator with waveforms. 5
- (b) Explain the measurement of the following op-amp parameters :
- (i) Output Resistance
 - (ii) Open-loop differential voltage gain
 - (iii) CMRR
 - (iv) Input Bias current
 - (v) Slewing rate. 2×5=10

UNIT-IV

7. (a) Explain the working of Common Gate n-channel JFET amplifier. 8
- (b) Explain the working of TRIAC. 7
8. (a) Explain the working of n-MOSFET with its characteristic waveforms. 10
- (b) Explain the working of UJT. 5