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[4756]-103

F.E. (First Semester) EXAMINATION, 2015

BASIC ELECTRONICS ENGINEERING

(2012 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Figures to the right indicate full marks.

(ii) Neat diagrams must be drawn wherever necessary.

(iii) Use of electronic pocket calculator is allowed.

(iv) Assume suitable data, if necessary.

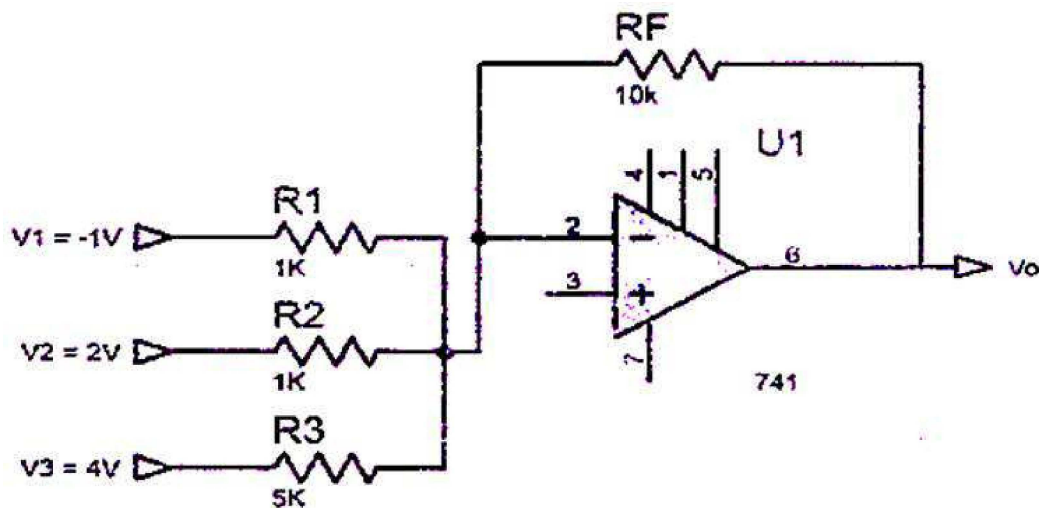
1. (a) Explain the working of positive clamper with its waveforms. [6]
- (b) What is dc load line ? Explain the role of Q-point on dc load line. [6]

Or

2. (a) Explain the working of positive biased shunt clipper with its input and output waveforms. [6]
- (b) Differentiate between CB, CE and CC configurations. [6]

P.T.O.

3. (a) In shown in the following Fig. let $R_1 = R_2 = 1 \text{ k}\Omega$, $R_3 = 5 \text{ k}\Omega$, $R_f = 10 \text{ k}\Omega$, $V_1 = -1\text{V}$, $V_2 = 2\text{V}$ and $V_3 = 4\text{V}$. Calculate V_o . [6]



- (b) State the IC number for the following two input logic gate : [6]
- AND
 - NAND
 - OR
 - NOR
 - EX-OR
 - NOT.

Or

4. (a) Define the following parameters of op-amp : [6]
- BW
 - PSRR
 - CMRR.

- (b) Draw the explain full adder using two half adder with its truth table. [6]
5. (a) With a neat diagram explain the construction and working of LVDT. Give its advantages, disadvantages and applications. [7]
- (b) Draw a neat block diagram of a digital thermometer and explain its operation. [6]

Or

6. (a) Write a short note on Selection criterion for transducers. [7]
- (b) Compare : [6]
- (i) SCR and TRIAC
- (ii) DIAC and TRIAC.
7. (a) Draw and explain the electromagnetic spectrum or IEEE frequency spectrum. List its applications. [7]
- (b) Compare : AM and FM. [6]

Or

8. (a) What is modulation ? Explain AM technique in detail and write AM expression. [7]
- (b) Explain the basic structure of mobile phone system. [6]