

In. 2579-09.

2115109 VR-3807

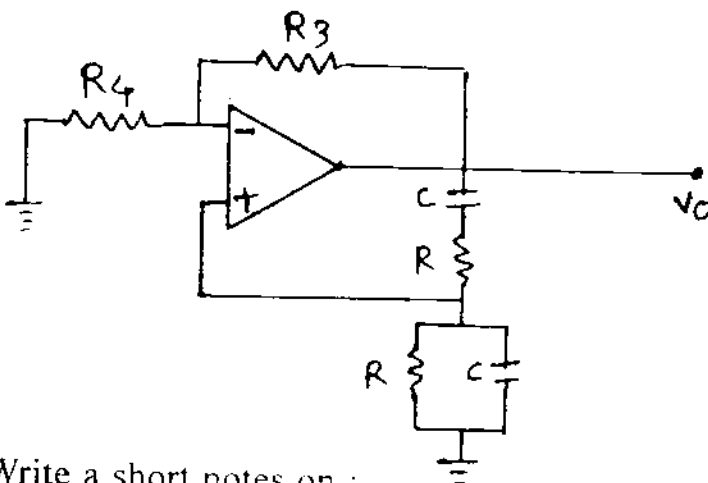
(REVISED COURSE)

(3 Hours)

[Total Marks : 100

- B. : (1) Question No. 1 is **Compulsory**.
(2) Attempt any **four** questions out of remaining **six** questions.

- (a) Write a short note on Trans-Resistance amplifier. 5
(b) Compare different classes of amplifier based on operating cycle, position on Q point and efficiency. 5
(c) Differentiate between clipper and clamper. 5
(d) Draw symbol of operational amplifier indicating all the terminals properly. 5
- (a) Draw the block diagram of operational amplifier and explain the each Block 10 in detail.
(b) Explain the working of Weinbridge oscillator using operational amplifier. 10
- (a) Determine whether the circuit shown below will work as an oscillator or not, 10 if yes, determine the frequency of oscillator.



$R = 5.1 \text{ k}\Omega$
 $C = 0.001 \mu\text{F}$
 $R_3 = 6 \text{ k}\Omega$
 $R_4 = 2 \text{ k}\Omega$

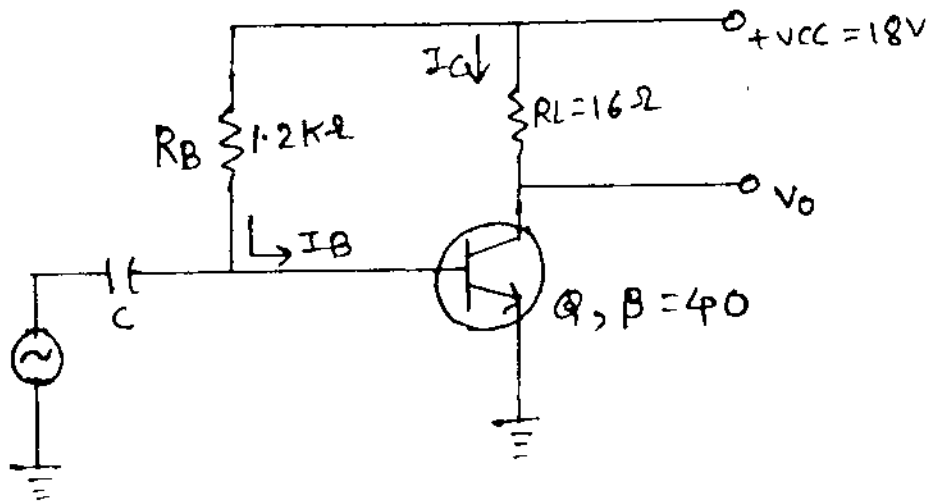
- (b) Write a short notes on : - 10
(i) Series-shunt configuration
(ii) Shunt-series configuration
(iii) Series-series configuration
(iv) Shunt-shunt configuration.
- (a) Draw and explain the output stage of IC 741 operational amplifier. 10
(b) Explain the working of non inverting operational amplifier. Derive the expression 10 for its closed loop voltage gain.

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5. (a) What is heat sink ? What is its function ?
 (b) Calculate the input power, output power and the efficiency of class A amplifier shown in below. The input voltage causes a based current 5mA. rms.



6. (a) Explain the close loop and open loop response of operational amplifier.
 (b) State and explain different characteristics of practical op-amp.
7. Write a short notes on any **two** :—
 (i) DC to DC converter.
 (ii) Switching mode power supply.
 (iii) IC 723.