(OLD COURSE)   **QP Code :14400**
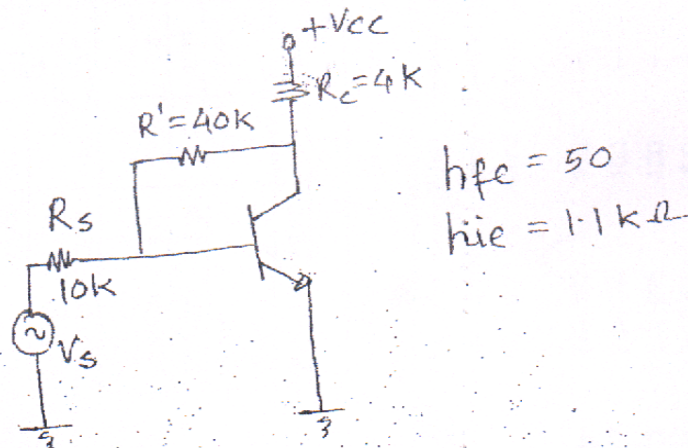
(3 Hours)   [Total Marks : 100]

N.B.: (1) Question No. 1 and 2 are **compulsory**.
   (2) Attempt any **three** questions from remaining **five** questions.
   (3) **Figures** to the **right** indicate **full** marks.
   (4) Assume **suitable** data wherever **necessary**.

1. Design a two stage RC coupled CE-CE amplifier for the following parameters.   20
   $Av \geq 2500$, Frequency $\leq 30Hz$, stability factor ≤ 8, $Vo = 2.5$ volts.
   Use BC 147 A transistor.

2. Design two stage RC coupled amplifier for the following parameters $Av \geq 75$,   20
   frequency = 20Hz, Vo = 3 volts, $I_{OQ} = 1.38$ mA, $Ri = 1$ MΩ use BFWll JFET.

3. (a) Design large signal transformer coupled class A power amplifier to provide 6W   10
      output power to the 4Ω load.
   (b) Draw two stage CE amplifier and derive the expression for   10
         (i) Small signal mid band vltage gain (ii) Input impedance
      (iii) Output impedance.

4. (a) Explain the working principle of a wein bridge oscillator. Derive the expression for   10
      the frequency of oscillation and the value of gain required for sustained oscillation.
   (b) Draw the circuit diagram for class B push-pull power amplifier and derive the   10
      expression for conversion efficiency.

5. (a) Explain the operation of transistorized ASTABLE multivibrator with appropriate   10
      waveforms.
   (b) For the feedback amplifier shown in figures, identify the type of feedback and find   10
      out Avf, Rif, Rof using -ve f/b approach.

[TURN OVER

LM-Con. 9599-14.