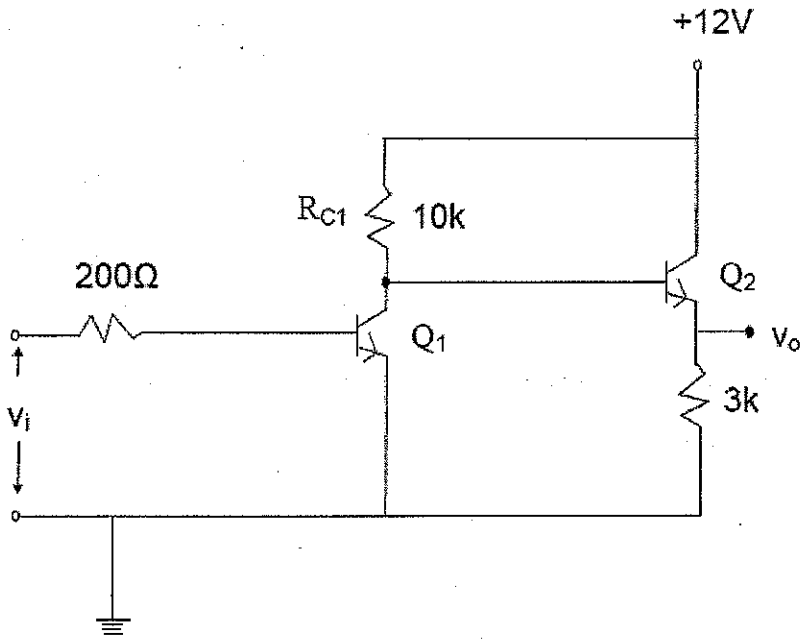
B.Tech. INSTRUMENTATION & ELECTRONICS ENINEERING EXAMINATION, 2019
(2nd Year, 1st Semester)
ELECTRONIC CIRCUITS-II

Time : Three hours **Full Marks: 100**

Answer any five questions

1. a. Discuss on different type of amplifiers VCVS, VCVS, CCVS and CCCS.
b. The two-stage amplifier shown in fig uses transistors Q_1 and Q_2, both having current gain β of 80 and dynamic emitter resistance, r_e, of 25 Ω each. Find out the overall voltage gain of the amplifier



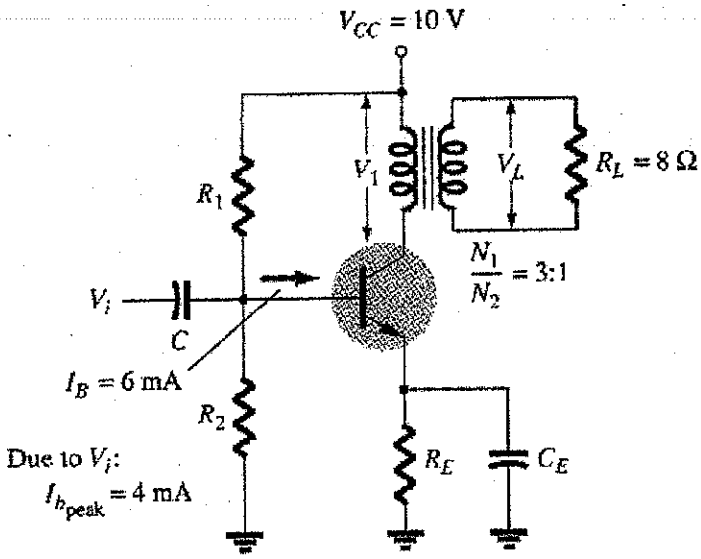
10+10

2. a). Describe Class B power amplifier and find out its efficiency.
b) For a class B amplifier providing a 20-V peak signal to a 16-Ω load (speaker) and a power supply of V_{CC} = 30 V, determine the input power, output power, and circuit efficiency.

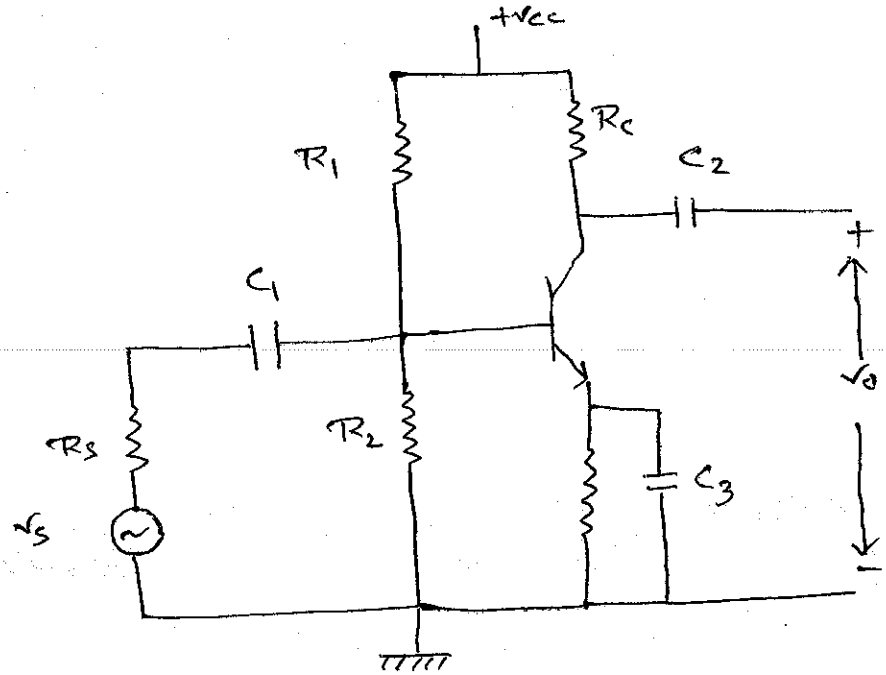
10+10

3. a) Discuss transformer-coupled Class-A amplifier:

b) Calculate the ac power delivered to the 8-Ω speaker for the circuit of Fig. below . The circuit component values result in a dc base current of 6 mA, and the input signal *(V_i)* results in a peak base current swing of 4 mA. 10+10



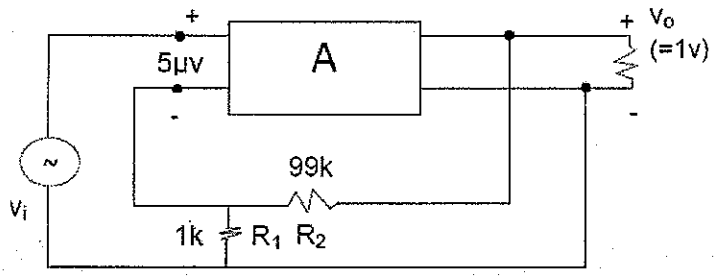
4) Calculate the input impedance, output impedance, voltage and current gain for the circuit given below. 20



5. a) What is multivibrator? What are the different types of multivibrator? Sate their applications.
b) Discuss the operation of fixed-bias bistable multivibrator with proper circuit diagram.

[1+1+3]+15

6. a) Derive the expression of the output oscillation frequency of phase shift oscillator.
b) In the series – shunt feedback amplifier shown in fig. calculate the voltage gains without feedback, A, and with feedback A_{FB}



10+10

X