Total No. of Questions : 10] [Total No. of Printed Pages : 4

Roll No. .....

EC–404

B. E. (Fourth Semester) EXAMINATION, Dec., 2011

(Electronics & Communication Engg. Branch)

ELECTRONIC CIRCUITS

(EC–404)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt *one* question from each Unit. All questions carry equal marks.

Unit–I

1. (a) Determine the following for fixed bias configuration of fig. 1.

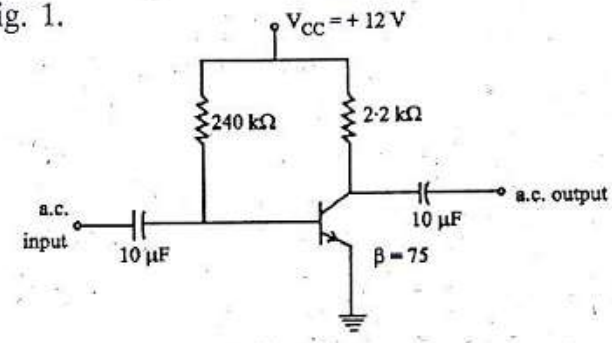

Fig. 1

(i) I_{BQ} & I_{CQ} (ii) V_{CEQ}

(iii) V_B & V_C (iv) V_{BC}

(b) Analyse the common collector configuration using *h*-parameters.

P. T. O.

[2]

Or

8. (a) Explain the need of Bootstrapping. How is it done ?

(b) Differentiate on the basis of the performance of transformer coupled, RC coupled and direct coupled amplifiers.

Unit–V

9. Discuss the following applications of op-amp. :

(i) Integrator

(ii) Schmitt trigger

(iii) Log amplifier

Or

10. Discuss the following applications of op-amps. :

(i) Differentiator

(ii) Instrumentation amplifier

(iii) Antilog amplifier

Or

2. (a) Determine the d. c. bias voltage V_{CE} and the current I_C for the voltage divider configuration of fig. 2.

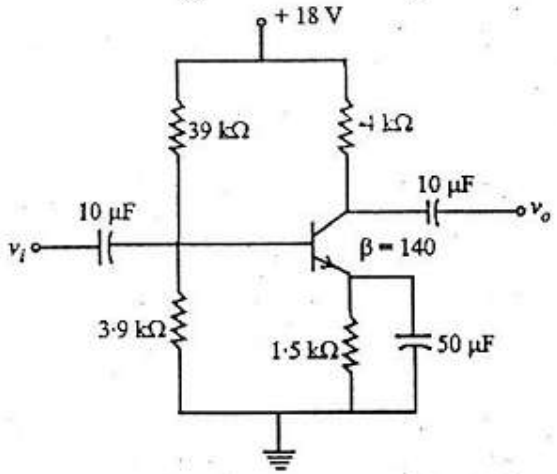

Fig. 2

(b) Discuss what is Miller capacitance and its effects on voltage gain.

Unit – II

3. (a) Calculate the voltage gain of the circuit of fig. 3.

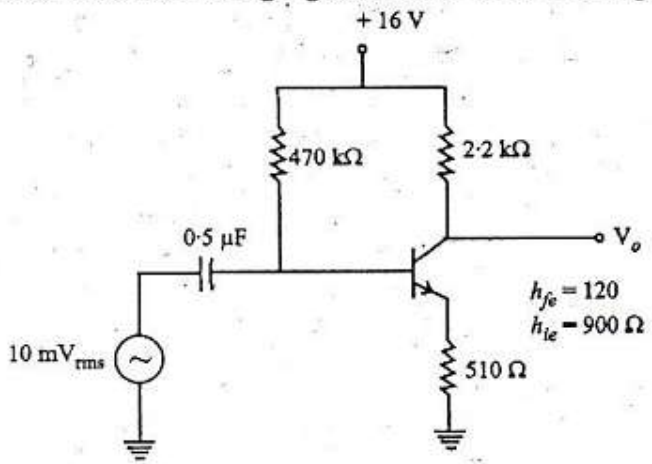

Fig. 3

(b) Discuss the principle of working of Hartley oscillator.

Or

4. (a) Determine the feedback gain of a voltage series feedback FET amplifier shown in fig. 4.

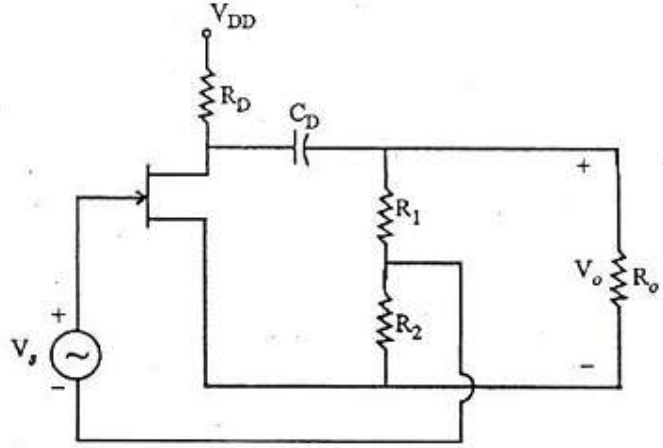

Fig. 4

(b) Discuss the principle of working of RC phase shift oscillator.

Unit – III

5. (a) Determine the maximum efficiency of series fed Class A amplifier.

(b) Discuss the working of stagger tuned power amplifier.

Or

6. (a) For a Class B amplifier using a supply of V_{CC} = 30 V and driving a load of 16 Ω, determine the maximum input power, output power and transistor dissipation.

(b) Discuss the effect of loading on power amplifier.

Unit – IV

7. (a) Discuss the effect of cascading on the bandwidth of amplifiers.

(b) Explain the working of differential amplifier and also calculate the differential and common mode gain.