

C 58247

(Pages : 2)

Name.....
Reg. No.....

**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION,
JUNE 2009**

PT/EC/2K 404/PTEC 2K 504—ELECTRONIC CIRCUITS

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

- I. (a) Draw AC and DC load line and explain its importance.
(b) Differentiate between compensation method and stabilization method. Explain any one compensation circuit.
(c) Explain the MOSFET CS amplifier in fixed bias configuration.
(d) Why is self bias superior compared to other types of biasing methods ? Explain.
(e) Draw the general block diagram of Current Series feedback amplifier and state the effect on input resistance, output resistance.
(f) Crystal Oscillators offer excellent stability. Justify.
(g) What are wide band amplifiers ? Explain in short.
(h) Prove that Cascode amplifier is a wide bandwidth amplifier.

(8 × 5 = 40 marks)

- II. (A) For a CE amplifier in self bias arrangement determine s' , s'' and s''' .

Or

- (B) Draw the high frequency equivalent circuit of RC coupled amplifier and discuss its response.

- III. (A) Figure (a) Below shows the circuit of a self biased JFET amplifier and Figures (b) indicates the transfer characteristic curve of JFET. Find (i) the quiescent values of I_D and V_{GS} . Also find (ii) the value of d.c. voltage between drain and ground.

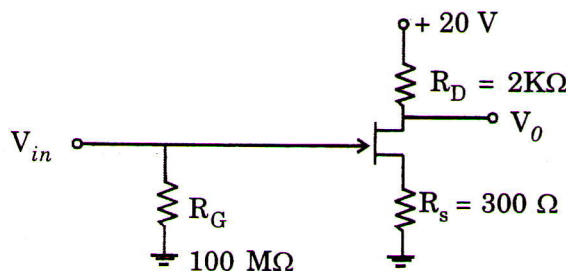


Fig. (a)

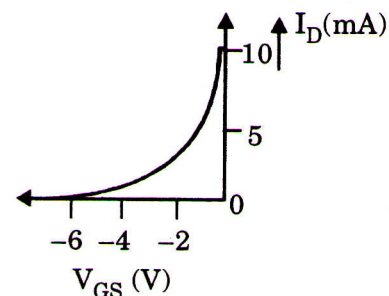
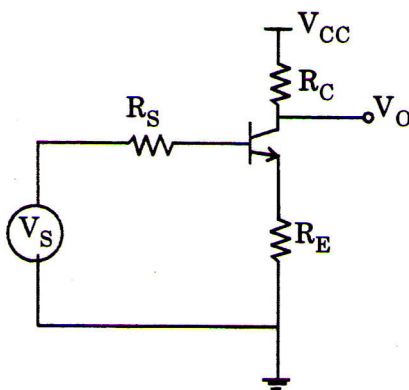


Fig. (b)

Turn over

- (B) Draw the circuit diagram of Common Gate MOSFET amplifier. Derive expression for its voltage gain, input resistance and output resistance from the small signal equivalent circuit.

- IV. (A) Identify the type of feedback topology for the circuit given below. Determine R_{if} , R_{of} , A_{vf} and A_{if} .



Or

- (B) Draw the circuit of RC phase-shift oscillator and explain. Determine the condition for sustained oscillation and the expression for f_{osc} .

- V. (A) With circuit and small signal model discuss the compensation technique for Broad band amplifier.

Or

- (B) Draw the circuit of class B push-pull amplifier and explain its working. Determine the expression for maximum collector efficiency. Also list its advantages and drawbacks.

(4 × 15 = 60 marks)