



PART – B

(5×13=65 Marks)

11. a) With neat diagram explain the different types of biasing of JFET. (13)

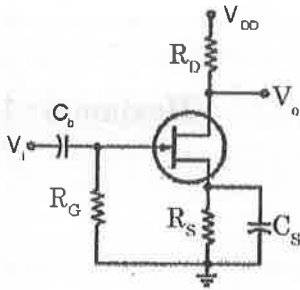
(OR)

- b) The amplifier shown in Fig., n-channel FET for which $I_D = 0.8 \text{ mA}$, $V_P = -20 \text{ V}$ and $I_{DSS} = 1.6 \text{ mA}$. Assume that $r_d > R_d$. Find :

i) V_{GS} . (5)

ii) g_m . (4)

iii) R_S . (4)



12. a) With neat diagram, explain BJT Differential Amplifier and its different modes of operation. (13)

(OR)

- b) Explain Bootstrap Emitter Follower technique. (13)

13. a) With neat diagram, explain Common source JFET amplifier with self-bias. (13)

(OR)

- b) Explain the small signal analysis of Common-Gate MOSFET amplifier. (13)

14. a) Explain the Low frequency analysis of BJT amplifier. (13)

(OR)

- b) Draw a two stage RC coupled amplifier and derive the expression for upper and lower cut-off frequencies. (13)

15. a) Explain current steering circuit using MOSFET. (13)

(OR)

- b) Explain CMOS differential amplifier and also write the expression for Differential mode gain and common mode gain. (13)

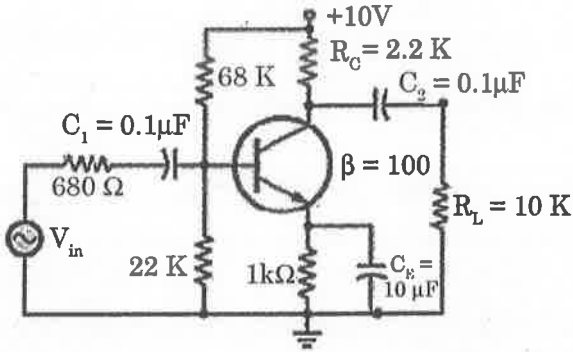


PART – C

(1×15=15 Marks)

16. a) Derive and determine the low frequency response parameters of the amplifier circuit shown in the figure. (15)

Also draw the low frequency response of it.



(OR)

- b) i) Derive expressions and analyze the IC MOSFET amplifier with active load, enhancement load and depletion load. (8)
ii) Give brief notes on BiMOS cascode amplifier. (7)

