

10/11/08
A.N

(Please Write your Roll No. immediately)
Second - Term Examination

Roll No.

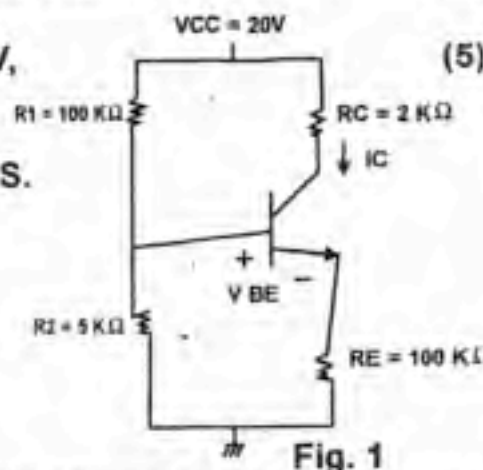
Third Semester (B.Tech)
Paper Code : ETCS : 203
Time : 1.5 Hrs.

November, 2001
Subject : Analog Electronics
Max. Marks : 30

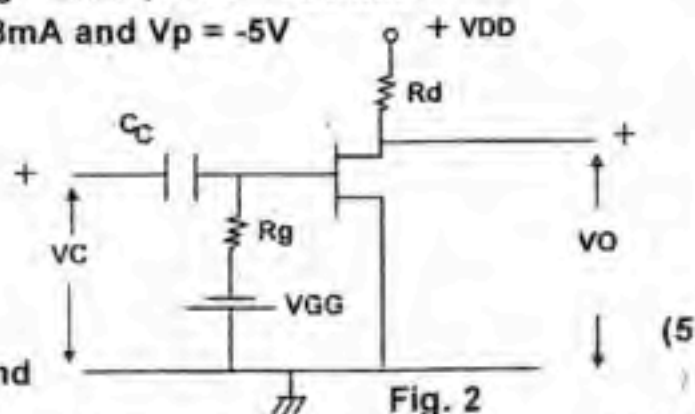
Note : Attempt Any Three Questions, All Questions Carry Equal Marks. Assume the missing data, if any

- Q No. 1 (a) Explain the operation of n-channel JFET. Draw the drain characteristics and explain the Various regions. (5)
- (b) Draw a fixed bias and self bias circuit and explain why as self bias circuit is better than fixed bias. (3)
- (c) Draw and explain the block diagram of OP-AMP. (2)

- Q No. 2 (a) For the circuit shown in fig 1, $V_{CC} = 20V$, $R_C = 2K\Omega$, $\beta_{dc} = 50$, $V_{be \text{ active}} = 0.2V$, $R_1 = 100 K\Omega$, $R_2 = 5K\Omega$ and $R_E = 100$. Calculate I_B , V_{CE} , I_C and Stability factor S . (5)



- (b) Draw the circuit of an RC-coupled amplifier show the frequency response & explain why gain falls at low and high frequency (3)
- (c) Compare FET with BJT (2)
- Q No. 3 (a) Determine the drain current I_D and V_{DS} for the Circuit shown below in fig 2 $V_{GG} = -2V$, $R_g = 2M\Omega$, $V_{DD} = 12V$ and $R_d = 2K\Omega$ given that $I_{DSS} = 8mA$ and $V_p = -5V$ (5)



- (b) Write technical notes on
(i) CMRR (ii) Virtual Ground
(iii) Slew rate (5)
- Q No. 4 (a) Using 'h' paramater model of an n-p-n transistor, derive expression for
(i) input impedance (ii) current gain (iii) voltage gain (iv) output impedance (5)
- (b) Explain the following (5)
- (i) Thermal Stability (ii) AC Emitter resistance (iii) Enhancement mode MOSFET