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Third Semester B.E. Degree Examination, June/July 2015 Electronic Circuits

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions, selecting
atleast TWO questions from each part.**

PART - A

- 1 a. With the help of circuit diagram, explain the accurate method of voltage divider bias. (08 Marks)
- b. For the emitter bias network determine:
i) I_B ii) I_C iii) V_{CE} iv) V_C v) V_E vi) V_B vii) V_{BC} viii) i/p resistance. (04 Marks)

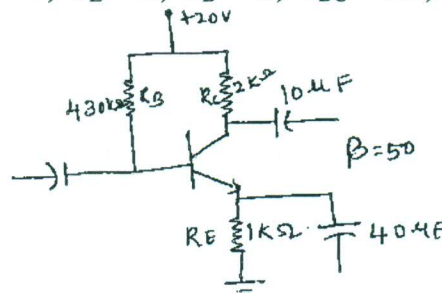


Fig. Q.1(b)

- c. Explain the gate characteristics of SCR. (08 Marks)
- 2 a. With the help of neat diagram, describe the operation of N-channel depletion and MOSFET's. (08 Marks)
- b. Explain any three FET applications with circuit diagram. (06 Marks)
- c. Explain CMOS inverter operation. (06 Marks)
- 3 a. Define: i) Responsivity ii) Response time iii) Noise equivalent power (NEP). (06 Marks)
- b. Explain the construction of an LCD. (08 Marks)
- c. Explain the cathode ray tube displays. (06 Marks)
- 4 a. Explain the darlington amplifiers. Determine the value of input impedance and output impedance and gain using proper circuit diagram. (12 Marks)
- b. Determine the lower cut off frequency of the BJT amplifier shown in Fig. Q.4(b) given that h-parameters of the transistor are $h_{ie} = 1.5K\Omega$ and $h_{fe} = 100$. (08 Marks)

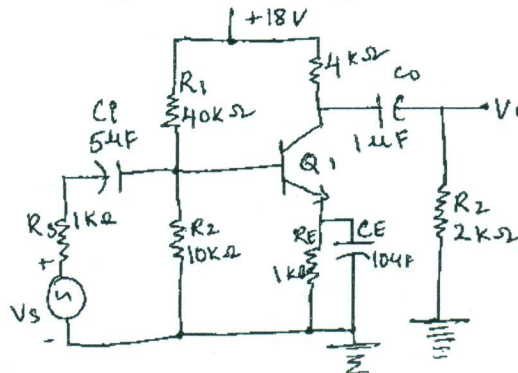


Fig. Q.4(b)



PART – B

- 5 a. Describe the effect of negative feedback on gain. (06 Marks)
- b. Explain the series-series feedback with schematic arrangement. (08 Marks)
- c. Write the advantages of negative feedback:
 - i) Effect on bandwidth
 - ii) Effect on noise
 - iii) Desensitvity of gain. (06 Marks)

- 6 a. Explain the astable multivibrator with waveform. (10 Marks)
- b. Explain R_c high-pass circuit as differentiator. (05 Marks)
- c. A simple low-pass R_c network is fed with a 10V step. If $R = 1K\Omega$ and $C = 0.01\mu F$. what will be the time period in which the o/p will change from 1.0 to 9.0V (05 Marks)

- 7 a. Explain buck regulator and inverting regulator, with neat diagram. (12 Marks)
- b. Explain the regulated power supply parameters:
 - i) Load regulation
 - ii) Line regulation
 - iii) Output impedance
 - iv) Ripple rejection factor. (08 Marks)

- 8 a. Explain the absolute value circuit. (08 Marks)
- b. Explain with the neat diagram voltage-to-current converter. (06 Marks)
- c. Explain the differential amplifier input stage of Op-amp. (06 Marks)

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