

TEC-301

1107

Printed Pages : 4

Paper Code & Roll No. to be filled in your Answer Book

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B. Tech. II Year (III Sem.)

Odd Semester Examination-2015

ELECTRONIC DEVICE AND CIRCUIT

Time : 3 Hours]

[Maximum Marks :100

Answer Any Four

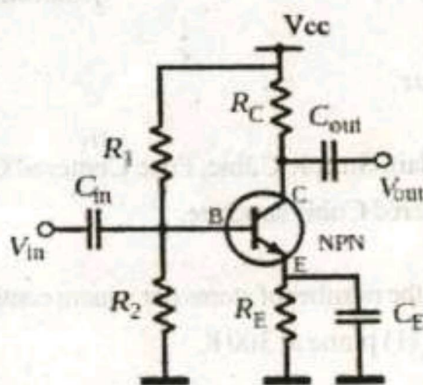
(4x5=20)

1. (1) Explain Simple Cubic, Face Centered Cubic and Body Centered Cubic structure.
1. (2) Find the number of atoms per square centimeter in silicon in (1 11) plane at 300 K.
1. (3) How a ferromagnetic substance become permanent magnet?
1. (4) Explain permanent magnetic dipoles.
1. (5) What a ferromagnetic material?

Answer Any four

(4x5=20)

2. (1) What is early effect or base width modulation?
2. (2) Explain the Ebers Moll model of a transistor.
2. (3) If the value of resistances are $R_1=390\text{ K}\Omega$, $R_2=39\text{ K}\Omega$, $R_C=4\text{ K}\Omega$, $R_E=1.5\text{ K}\Omega$ respectively, find the terminal voltages V_B , V_C and V_E for given fig.



2. (4) Explain h parameter model.
2. (5) Calculate h parameters for CC configuration in terms of CE configuration.

Answer Any Two

(2x10=20)

3. (1) i) Differentiate between amplifier and oscillator?
ii) Write a short note on crystal oscillator?
3. (2) Write a short note on the oscillator circuit shown in fig 3.1.
Find the value of C required for sinusoidal oscillation of 1 KHz?

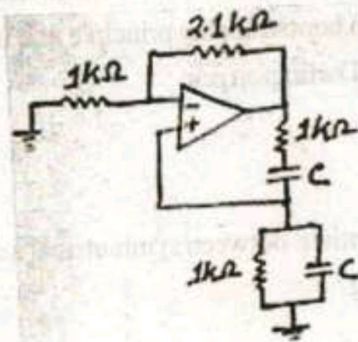


Fig 3.1

3. (3) What are the different feedback amplifier topologies?
Discuss any one feedback amplifier with its circuit diagram?

(3)

P.T.O.

Answer Any Two

(2x10=20)

4. (1) i) Explain multistage frequency effects.
- ii) How amplification provided by a Darlington pair is more as compare to other amplifiers?
4. (2) What are the advantage and disadvantage of Darlington pair?
4. (3) Discuss biasing problem in Darlington pair. How is it solved? Explain bootstrapping principle and how effectively it is used in Darlington pair.

Answer Any Two

(2x10=20)

5. (1) Differentiate between symmetrical and unsymmetrical triggering?
5. (2) In an astable mutivibrator, the base resistor are of $12.5 \text{ K}\Omega$ and the capacitors are of $0.01 \mu\text{F}$. Determine the PRR (Pulse Repetition Rate).
5. (3) i) Explain Astable multivibrators.
- ii) Explain Bi-Stable multivibrators.

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