

1ECB09_Electronics Devices & Circuits-I

Question Bank

Transistor Biasing circuit and Thermal stability

I Answer of following questions in short

1. Why we need D. C. Biasing circuit?
2. On which factor collector currents depends?
3. List different method of biasing.
4. Explain D. C. Load line for transistor.

II State True or false with Justification

1. The thermal resistance is measured in terms of ohm.
2. Collector current does not depend on temperature.
3. For faithful amplification, Q-point must be at centre of active region.
4. The slope of D. C. Load line depends on Supply voltage.
5. The slope of D. C. Load line depends on R_c .

III Fill in the blanks

1. The unit of thermal resistance is =_____.
2. _____ is widely used DC biasing method.
3. For faithful amplification, transistor must operates in _____ region
4. _____ method is also known as self bias
5. The slope of D. C. Load line is_____.

IV Explain/Define-

Operating point (Q-point), Thermal resistance,
Thermal Stabilization, Thermal runaway,
Stability factors.

V Answer of following questions in brief

1. Why we need DC biasing of transistor? List out the various methods of biasing.
2. Draw and explain the fixed biased method for transistor Biasing.
3. Draw and explain the collector resistor method for transistor Biasing.
4. Draw and explain the voltage divider method for transistor Biasing.
5. Explain thermal runaway.
6. Write a short note on Thermal Resistance.
7. Write a short note on Heat sink.
8. Derive the generalized equation of stability factor S for transistor.
9. What is stabilization? Explain the needs of stabilization.

VI Examples

Refer *Class Notes*