

Question Bank (G scheme)

Name of subject: ELECTRONICS DEVICES AND CIRCUITS

Subject code: 17319

Semester: III

Unit Test :I

Course : EJ/IS/IE

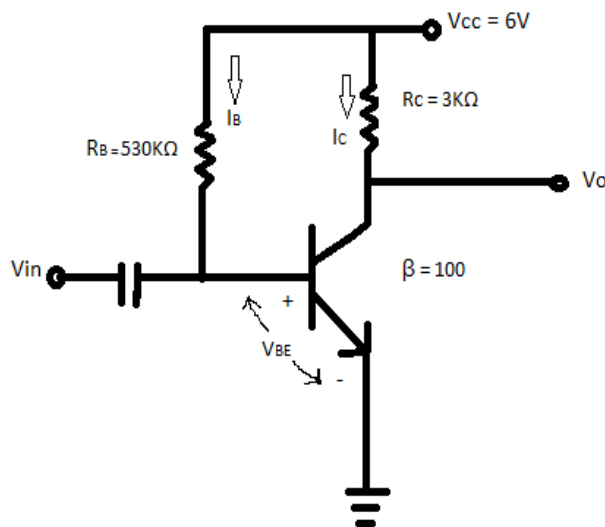
Chap 1) TRANSISTORS (24 marks)

3 marks question

- 1) List types of transistors and draw their symbols. Why ordinary junction transistor is called a bipolar transistor.
- 2) In CE configuration if $\beta=150$, leakage current $I_{CEO} = 100 \mu\text{A}$. If base current is 0.2mA , determine I_C and I_E .
- 3) State different configurations of BJT. Define α and β of a transistor.
- 4) Define biasing and state the need of biasing.
- 5) Explain thermal runaway. How it can be avoided.

4 mark question

- 6) Compare CB, CC and CE configurations.
- 7) Draw and explain output characteristics of CE configuration.
- 8) Derive the relation between α and β with respect to BJT.
- 9) Explain the operation of NPN transistor.
- 10) Draw the circuit diagram of CB configuration. Draw input and output characteristics with different regions.
- 11) Draw and explain voltage divider bias method.
- 12) Study the following fixed bias circuit.



Also draw the DC load line and determine the operating point.

- 13) Explain transistor as a switch.

14) Define delay time, rise time, fall time, TON and TOFF time.

Chap 2 FET (12 marks)

3 marks question

13) Define amplification factor, transconductance and drain resistance with respect to JFET.

15) Give the interrelationship between μ , g_m and r_d .

16) Draw drain and transfer characteristics of n-channel JFET.

4 mark question

17) Explain self-bias method for FET with circuit diagram.

18) Compare BJT and FET.

19) Draw and explain N-channel D – MOSFET.

20) Draw and explain P-channel JFET.

21) Explain the working of N-channel E-MOSFET.

Chap 3. Amplifiers (20marks)

3 marks question

22) Define voltage gain, bandwidth and power gain.

23) Compare Class A, Class B, Class C, Class AB

24) Explain the concept of crossover distortion with suitable waveform

25) Define 1. Resonance frequency 2. Efficiency 3. Power Amplifier

4 mark question

26) Draw and Explain single stage CE amplifier.

27) An amplifier has a signal input voltage of 0.25V and draws 1mA from the source. The amplifier delivers 8V to load at 10mA. Determine

1) Current gain, 2) voltage gain, 3) power gain, 4) i/p resistance

28) With the help of neat circuit diagram explain the operation of common source amplifier.

29) Draw & explain Class B push pull Amplifier