



A Charutar Vidya Mandal's Institution
V.P. & R.P.T.P. SCIENCE
COLLEGE(AUTONOMOUS) (Grant-in-Aid)
Affiliated to Sardar Patel University
VALLABH VIDYANAGAR-388120



Bachelor of Science (Semester IV) Internal Examination – 2026

US04MIELE01: Transistor Circuits

Date & Day: 10th March 2026, Tuesday
Time: 02:45 PM to 03:45 PM

Total Marks: 20

Q.1 Multiple choice questions (Attempt All)

(06)

- 1 Common collector circuit is also known as _____.
(A) Current Follower. (B) Base Follower.
(C) Collector Follower. (D) Emitter Follower.
- 2 The ratio of the number of electrons arriving at collector to the number of emitted electrons is known as _____.
(A) base transportation factor (B) base efficiency
(C) collector transportation ratio (D) collector efficiency
- 3 Increase in leakage current due to the rise in temperature is known as _____.
(A) thermal runaway (B) Current runaway
(C) temperature runaway (D) All of above
- 4 The current due to imperfection in the transistor junction is called _____.
(A) Forward current. (B) Collector current.
(C) Emitter current. (D) Leakage current.
- 5 The Operating point in a transistor amplifier circuit is selected _____ region.
(A) Active. (B) Saturation.
(C) Near Cutoff. (D) Near Saturation.
- 6 Which of the following requires Differential power supply?
(A) Fixed Bias. (B) Collector to Base Bias
(C) Voltage divider Bias. (D) Emitter Bias.

Q.2 Explain input and output characteristics for CC configuration with necessary figures.

(07)

OR

Q.2 How transistors work as an amplifier? Explain it.

(07)

Q.3 Draw the fixed bias circuit and derive an expression for the operating point.

(07)

OR

Q.3 Draw the voltage divider biasing circuit and using approximate analysis derive its operating point.

(07)



Roll No: - _____

Teacher's Sign: - _____



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Total Marks: 05

Q.1 Write whether the given sentence is True or False. (Attempt All)

05

- 1 Input resistance of common collector configuration is zero. _____
- 2 The function of the emitter is to emit majority charge carriers into the base. _____
- 3 Thermal run away is end less cycle. _____
- 4 Emitter current is sum of Base and Collector current. _____
- 5 Operating point does not affected by temperature variations. _____

