

B. Sc. Semester-III (Honours) Examination 2020

Subject- Electronic Science

Paper- CC V (Theory)

Full Marks- 40

Time- 2 hours

Candidates are required to give their answers in their own words as far as practicable.

Answer any eight of the following questions (all questions carry equal marks): $5 \times 8 = 40$

1. Discuss the method of a Voltage regulator circuit with a Zener- diode, using proper circuit diagram.
2. With proper circuit diagram discuss the operation of a Full Wave Bridge Rectifier using diodes.
3. With proper circuit diagram discuss the method of developing a clipping circuit using a diode.
4. Write a short note on Thermal Runaway of a Transistor circuit.
5. What do you mean by Voltage divider bias of a Transistor circuit? Discuss its principle of operation with a suitable circuit diagram.
6. Draw the circuit diagram of a CE mode based Transistor amplifier. Hence draw its input and output characteristic curves.
7. With suitable circuit diagram discuss the operation and application of a Darlington Pair circuit.
8. Derive the Barkhausen Criteria for a feedback oscillator.
9. Discussion the operational principle of a Colpitts oscillator with proper circuit diagram.
10. Discuss the operational principle of a single ended Class-A power amplifier with proper circuit diagram.