

S. B. Roll. No.....

ELECTRONIC DEVICES AND CIRCUITS
3rd Exam/Elect/5802/Nov'24
(For 2023 Batch)

Duration: 3Hrs.

M.Marks:50

SECTION-A

Q1. Do as directed any nine of the following.

9x1=9

- a. The process of adding impurity to intrinsic semiconductor is called _____.
- b. The reverse voltage at which PN-junction breaks is known as _____ voltage.
- c. Ripple factor is defined as the ratio of R.M.S value of a.c to d.c component (T/F).
- d. Extrinsic semiconductors are in the purest form.(T/F)
- e. Emitter is the region which injects the _____ carriers into transistor.
- f. The drawback of collector to base bias is that it reduces the voltage gain of amplifier.(T/F)
- g. _____ Type of coupling is preferred for impedance matching..
- h. A _____ line is that straight line which represents graphical relationship between the output voltage and current.
- i. _____ BJT configuration has highest power gain.
- j. JFET stands for_____.
- k. Emitter region is mediumly doped and largest in area.(T/F)
- l. What are intrinsic semi conductors?

SECTION-B

Q2. Attempt any five questions.

5x4=20

- i. Explain how N-type semiconductor is formed with help of diagram?
- ii. Differentiate between BJT and JFET?
- iii. How zener diode is used as voltage regulator, explain with diagram?
- iv. What is the need of filter circuit? Draw and explain capacitor input or π -filter?
- v. What is stabilisation? Explain the need of stabilisation of operating point?
- vi. What is need of multistage amplifier? Write any two types of coupling and their purpose?
- vii. Explain the effect of forward biasing in a PN junction with diagram?

SECTION-C

Q3. Attempt any three questions.

3x7=21

- a. Explain the working of bridge type full wave rectifier with the help of diagram?
- b. Explain the construction and working of N-channel JFET with suitable diagrams?
- c. Draw single stage transistor amplifier circuit in CE configuration; write its working and function of various components?
- d. Explain the working of NPN transistor with diagram?
- e. Compare common base and common emitter transistor configuration on different parameters and draw their diagrams?