Code No: 5072/R19

FACULTY OF SCIENCE

B.Sc. **CBCS** I-Year (II-Semester) Regular Examinations, August-2023

Electronics-II

(Electronic Devices)

Time: 3 Hours Max Marks: 80

SECTION-A (4x5=20 Marks)

(Short Answer Type)

Answer any Four questions from the following

1. Explain the formation of depletion layer of PN Junction.
2. How a transistor is superior to vacuum diode?
3. A 1V increase in gate voltage changes the drain current 10mA in FET. Calculate the g_m value.
4. What is the principle of SCR?
5. Discuss high frequency model of BJT.
6. Define terms 'inter base resistance' and 'intrinsic stand off ratio'.
7. Explain V-I characteristics of zener diode.
8. Write the advantages of FET over BJT.

SECTION-B (4x15=60 Marks)

(Essay Answer Type)

Answer the following questions

9. (a) Derive an expression for the junction capacitance of PN junction.

   (OR)

   (b) Explain the construction of tunnel diode. Draw the circuit diagram to determine its characteristics.

10. (a) Draw the characteristic curves of PNP transistor using common base configuration.

    (OR)

    (b) Define h-parameters for a low frequency CE transistor. Give an equivalent h-parameter model for a common emitter BJT.

11. (a) Explain the construction and characteristics of JFET. Give its small signal model and explain different terms involved.

    (OR)

    (b) Discuss the characteristics of UJT explaining clearly the three regions into which it can be divided.

12. (a) With suitable examples explain how SCR is useful for power control applications.

    (OR)

    (b) Discuss the photoconductive effect and spectral response. Explain the salient features of photodiode and its characteristics.