

**A 12**

**Sreenidhi Institute of Science & Technology**

(An Autonomous Institution)

**Code No: 121EC05**

**B. TECH. I – Year II – Semester Examinations, July, 2014 (Regular)**

**ELECTRONIC DEVICES AND CIRCUITS (ECE)**

**Time: 3 Hours Max. Marks: 70**

**Note: No additional answer sheets will be provided.**

**Part-A**

**Max.Marks:20**

**Answer all QUESTIONS.**

1. Compare electro static and electromagnetic deflection mechanism.
2. Define static and dynamic resistances.
3. List the biasing techniques employed in transistor.
4. What are the advantages of FET over BJT?
5. Write the differences between small signal and large signal amplifier.
6. Define voltage regulator and voltage multiplier.
7. Draw the Zener diode characteristics.
8. What is the condition of thermal stability?
9. Draw the frequency response of RC- Coupled amplifier.
10. Draw a diagram giving basic structure of UJT.

**Part – B**

**Max. Marks: 50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

1. a) Describe the method of electro static focusing in a cathode ray tube. [6M]

b) An electron is emitted from a thermionic cathode with zero initial velocity and at a potential of 300V. Calculate the final velocity. [4M]

2) a) Explain breakdown mechanism in diodes. [4M]

b)The reverse saturation current at 300k of a germanium diode is 5nA. Determine the voltage to be applied to obtain a forward current of 50mA. [6M]

3) a) Derive expression for the stability factor in self bias method. [6M]

b) Draw the h- parameter model of transistor in CE configuration and describe its parameters. [4M]

4) a) Write the differences between BJT and FET. [4M]

b) Draw and discuss volt – ampere characteristics of SCR. [6M]

5) a) Compare CE,CB,CC amplifiers. [4M]

b) Explain about RC- coupled amplifier. [6M]

6) a) Draw the Schematic diagram of a voltage doubler and explain its working. [4M]

b) Draw the circuit for series type voltage regulator and explain its working. [6M]

7) a) A CC amplifier is driven by a voltage source of 0.1V, internal resistance of 1000 Ω the load impedance of 1000 Ω and h- parameters are hie= 1100Ω,hre =2.5x10-4 ,hfe= 50,& hoe =25µA/V then compute Ai , Zi Av , Yo.  [6M]

b) Derive expression for magneto static deflection sensitivity in cathode ray tube. [4M]

8) a) Explain the operation of n- channel depletion mode MOSFET. [6M]

b) Write short notes on short circuit protection. [4M]

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