USELT02 - Electronics Paper -II
(Semiconductor Diodes and Analog Electronics)

P. Pages : 2 |||||||||||||||||||||| **GUG/S/23/11549**

Time : Three Hours   * 1 6 8 0 *   Max. Marks : 50

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Either:

1. a) What is PN junction? Explain the formation of PN junction? Define Internal potential **10**
Barrier.

OR

b) With the help of circuit diagram explain the forward bias characteristics of PN junction **10**
diode? Explain the importance of VI characteristics.

Either:

2. a) What is rectifier? With the help of circuit diagram explain the working of half wave **10**
rectifier? Draw also input and output wave forms?

OR

b) What is filter? Explain with wave forms working of shunt capacitor filter. Define load and **10**
line regulation.

Either:

3. a) With suitable diagram explain the input output of transistor in CE mode configuration. What **10**
is the importance of output characteristic?

OR

b) What is biasing? With the help of diagram explain potential difference method of biasing. **10**
What is thermal runway?

Either:

4. a) What is two port networks? Explain how we find $h_{11}, h_{12}, h_{21}, h_{22}$, Define voltage gain **10**
and frequency response?

OR

b) Draw the small signal ac equivalent circuit diagram of RC coupled amplifier and derive h **10**
parameter for voltage gain, input impedance, current gain.

5.   Attempt **any ten** of the followings.   **10**

    a)   Define pinch off voltage.

    b)   What is Schottky diode?

    c)   Define dynamic forward resistance of the diode.

    d)   What is ripple factor?

    e)   What is the efficiency of full wave rectifier?

    f)   Differentiate half wave and full wave rectifier.

    g)   Define Current amplification factor.

    h)   Define stability Factor.

    i)   What is Q point?

    j)   What is h parameter?

    k)   Define input impedance.

    l)   Why h parameter is called Hybrid parameter?

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