Basic Electrical & Electronics Engineering [BEEE]

UNIT - I

Long Answer Questions:

1) Derivation of star-to-delta and delta-to-star.

2) Problems on series and parallel combination

3) Problems on source transformation.

4) Problems on nodal and mesh analysis.

5) Problems on star-to-delta and delta-to-star.

6) Write the V-I relation of R, L, C.

Short Answer Questions:

1) Define : a) Circuit   b) Active & Passive elements   c) Sources

   d) Node, branch, mesh, loop.   e) Linear & Non-linear circuits   f) Balanced & Unbalanced circuits

   g) Symmetrical & Asymmetrical circuits.

2) Define : charge, electric current, potential difference, power.

3) Define : a) Lumped & distributed elements.

   b) Uni-lateral & bilateral circuits.

   c) Time Variant & Time invariant circuits.

4) Define resistance, inductance and capacitance. Write their V-I relation.

5) Define Ohm's law. What are its limitations & applications?

6) Define KVL and KCL with an example.

7) Define series and parallel circuits with an example.

8) Draw the diagrams of star and delta connections.

9) Define Admittance, Impedance, Susceptance & conductance

10) Explain about Voltage division rule & Current division rule

UNIT - II

Long Answer Questions:

1) DC theorems (all 5).

2) AC through R, L, C circuits

3) AC through RL, RC and RLC circuits.

4) Problems on RL, RC and RLC series circuit.

Short Answer Questions:

1) All definitions of 1-ϕ AC circuits.

2) Statements & procedures of all 5 theorems.

3) Differences between AC and DC.

UNIT - II (PART-A)

Long Answer Questions:

1) Write the relation between line & phase values and power expression for balanced 3-ϕ star connection.

2) Write the relation between line & phase values and power expression for balanced 3-ϕ delta connection.

Short Answer Questions:

1) All definitions of 3-ϕ AC circuits.

2) Difference between star and delta connections.

3) Advantages of 3-ϕ AC circuits.

UNIT - II (PART- B)

Long Answer Questions:

1) Explain the working of P-N junction diode.

(Or)

Explain the V-I characteristics of P-N junction diode.

2) Differences between Ideal & Practical Diodes.

3) Effect of temperature on P-N Junction diode.

Short Answer Questions:

1) Symbols of PN, Zener and BJT.

2) What is diode current equation.

3) Characteristics of PN, Zener diodes.

4) What is no-bias condition.

5) Explain: Diode as a switch.

6) Comparision of V-I characteristics of PN and Zener diodes.

7) Advantages, disadvantages and applications of PN, Zener diode.

UNIT - IV (PART - A)

Short Answer Questions:

1) Explain the block diagram of RPS.

2) What is a rectifier? What are the types of rectifiers?

3) Advantages & disadvantages of all types of rectifiers.

4) All definitions.

Long Answer Questions:

1) Explain the working of half-wave rectifier with necessary sketches and parameters.

2) Explain the working of centre-tap full wave rectifier with necessary sketches and parameters.

3) Explain the working of bridge rectifier with necessary sketches and parameters.

4) Differences amongst half-wave, centre-tap and bridge rectifiers.

UNIT - IV (PART - B)

Long Answer Questions:

1) Explain the working of Zener diode.

2) Explain the working of Zener diode as voltage regulator.

3) Difference between breakdown mechanisms [Zener breakdown v/s avalanche breakdown].

Short Answer Questions:

1) Define Zener diode.

2) Advantages, disadvantages and applications of Zener diode.

3) Differences between P-N junction diode and Zener diode.

UNIT-V

Long Answer Questions:

**1) Explain the CB configuration.

**2) Explain the CE configuration.

**3) Explain the CC configuration.

4) Explain the need of biasing and what are the types of biasing techniques.

5) DC and AC load line.

Short Answer Questions:

1) Define transistor.

2) Define the construction of the transistor (P-N-P, N-P-N).

3) Define the operation of the transistor.

4) Relationship between α, β, γ.

5) Define early effect and punch through effect.

6) Advantages & disadvantages of transistor.

7) Define thermal runaway.

8) Explain the working of transistor as an amplifier.

9) Why BJT is called as Current Controlled device & Explain.

10) Derive the expressions for Transistor leakage currents

11) Problems on α, β & γ

12) Compare CB, CE & CC configurations.