

BEE-Viva. QUESTIONS : (A2-ETRX)

→ Experiment 1:

1. What does 103 written on cap mean? What type is it.
2. Distinguish betⁿ active-passive comp.
3. Types of diodes, how to identify terminals of diode.
4. Types of trans. how to identify terminals.
5. Identify nodes of LED, nodes of p-n junⁿ.
6. Differentiate between inductor & resistor. (How to)
7. What is power efficiency.
8. What is dilatational ckt.
9. What is the significance of resistor size.
10. State types of capacitors & how to identify them, given a value.

→ Experiment 2: & Experiment 3:

1. State:
 - a) Max power transfer thm.
 - b) Superposition thm
 - c) Norton's thm
 - d) Thevenin's thm
2. What is the internal resistance, of current & voltage source.
3. Application of superposition thm.
4. Application of max power trans thm.
5. How to calculate I_N of Norton's thm.
6. Interpret & explain graph of max power trans thm.
7. In max power transfer, if we get only 50% efficiency, then why do we use it in practical applications?

→ Experiment 4:

1. What is behaviour of ckt elements at various states?
Eg. Inductor at $t = \infty$ or Capacitor at $t = 0^+$.
2. Why do we use SPDT ~~the~~ switch?
3. What are various types & uses of switch.
4. What is τ (time constant) & how to calculate
5. Why is 5τ significant to 2
6. What does transient response of an ckt element mean?
7. Interpret & explain the graph (any of the graph can be asked from questions).
8. Why does the graph value saturate after a certain time.
9. ~~Why~~ Why do we open ckt / shrt ckt any ckt element?

→ Experiment 5:

1. What is power factor in ckt
2. Methods to improve power factor in ckt.
3. In RL ckt ~~what~~ leading/lagging component.
4. Various types of power.
5. What is phase difference betⁿ V_A, V_B, I_c (sketch graph)
6. Explain the variation in graph (when we $\uparrow R$ keep V const or vice versa)
7. Why do we (-ve) sign in \bar{Z}_T of RC ckt or (+ve) in \bar{Z}_T of RL ckt.

→ Experiment 6:

1. What does resonance mean?
2. How to achieve resonance condition in a) series b) Parallel
3. Type of ckt before reso in a) series b) Parallel ckt

4. What is Q-Factor? & its significance.
5. In the graph, how to find out bandwidth
6. Practical applications of resonance.
7. Variation in graph on increasing value of (R) resistance

→ Experiment 7: (Refer to youtube video for ckt connections and explanations RRS - Sir)

1. Analysis of star connections.
2. Analysis of delta connection } how connections are done
3. Relation between line & phase current, line & phase voltage in star/delta connection.
4. In the ^{CRT} graph, show which is line current, phase current.
5. Why do we use two power meters while connecting?
6. Which power meter gives, which power?
7. Why is the factor of 0.5773 in g-mult?
8. The phase difference between voltages, between currents.

→ Experiment 8:

1. Define: the power converter:
 - a) Buck
 - b) Boost
 - c) Buck-boost.
2. Difference between buck conv & boost converter.
3. What is the use transistor in ckt.
4. Use of diode in ckt.
5. How do we know the type of converter from diagram
6. From the graph, identify ripple current.
7. Explain duty cycle,
8. Any of graphs interpretation.

→ Experiment 9:-

1. What is C-rating of battery.
2. What are types of batteries.
3. What is DOD & SOC of battery.
4. What are the battery specifications.
5. Based on requirement, how to determine battery type.
6. Battery efficiency.
7. Types of power densities and battery energies.

→ Experiment 10:

1. What is transformer
2. What is voltage regulation
3. Working principle of transformers.
4. Why is there magnetizing current in transformers
5. Various losses in transformer; which one depends on load
6. Factor responsible for losses
7. What is efficiency of transformer.
8. What is significance of OC & SC test.
9. Types of transformers, on turns ratio basis.
10. Use of transformer with $K=1$.

Review

- * ~~Review~~ of literature of each experiment is to be read. Questions can be asked from there.