

ASSIGNMENT: 1 BASIC OF TRANSFORMER

1. Give the comparison between core and shell type transformers.
2. Derive equation $E_t = k\sqrt{Q}$ where $Q = \text{kVA}$ rating of a transformer. Explain how service conditions of transformer affect the value of K .
3. Determine the main dimensions of core and yoke for a 200 KVA, 50 Hz, 1-phase core type transformer. Use the following data:
Window space factor=0.32, Current density=3A/mm², Maximum flux density=1.1 Wb/m², Voltage per turn=14 V, Stacking factor=0.9. Net iron area=0.56d², where d is the diameter of circumscribing circle. Cruciform core is used with distance between adjacent limbs=1.6 times width of core lamination. The width of the largest stamping is 0.85d.
4. Explain why tapings are usually provided on HV side in a transformer.
5. Explain the importance of stepped core in transformer.