

## Transformer Related Interview Question

### **Q.1 Define Transformer? Explain its working.**

**Ans.** It is a device which is used to transform electrical energy from one circuit to another circuit. It has two winding one is primary and another is secondary. Winding connected to source is primary winding and to load side is sec. winding. Both are magnetic coupled and wound on a common magnetic core.

Transformation takes place on the basis of Faraday's Law of electromagnetic induction & the flux link with primary and secondary winding is known as mutual flux. And is responsible for transformation of energy. AC Voltage source is connected to primary winding & load is to the secondary winding.

### **Q.2 Explain the elementary theory of Ideal Transformer?**

**Ans.** Ideal Transformer does not exist in real, only it help us to understand the basic concept of practical transformer. Under the following assumption Ideal Transformer can be treated as Practical Transformer.

- The resistance of Transformer windings are Zero. Hence copper losses ( $I^2R$ ) are zero and windings are purely inductive.
- Hysteresis losses & eddy current losses are zero.
- No leakage in transformer.

### **Q.3 Explain Core type Transformer?**

**Ans.** It has a single magnetic core and two leg or limbs. First of all some part of low voltage winding (lv) is wound around the 2 limbs after that some part of high voltage (hv) winding is wound over lv winding. after that again lv is winding is wrapped over hv and so on. Both are wrapped over each other. Hence various section lv are connected in series and various section hv are also connected in series. Both are insulated by mica, paper etc.

### **Q. 4 Explain Shell type Transformer?**

**Ans.** It has a double magnetic circuit and 3 limbs but winding will be wrapped around the central limb. First of all lv is wound around central limb then hv will wrapped then again lv and so on. In thus winding don't overlap each other but they are of disc type. Hence hv is sand-witched between 2 lv winding.

### **Q.5 Define Step up & Step down Transformer?**

**Ans. Step Up:** This transformer is used to boost up the voltage level from primary winding to the secondary winding.

**Step Down:** This transformer is used to reduce the voltage level from primary winding to the secondary winding.

### **Q.6 Explain the working of tank and other accessories like terminal, bushing, conservator and breather?**

- **Tank:** It is filled with insulating oil which provides cooling to both winding and insulation to transformer assembly
- **Terminal and Bushing:** The winding of transformer is brought outside and covered with the porcelain bushings.
- **Conservator:** It permits the expansion of oil and keeps the main transformer full of oil. It is placed over tank.
- **Breather:** It is placed over the conservator. It allows to pass the gasses in atmosphere which is produced in the tank. It consists of silica gel to prevent moisture from entering inside the tank.

**Q.7 Define Transformation Ratio?**

**Ans.** It is the ratio of sec. voltage to the primary voltage. Denoted by  $k$ .

For Ideal transformer:  $k = N_2/N_1 = V_2/V_1 = I_1/I_2$

**Q.8 Why the core of Transformer is laminated?**

**Ans.** To reduce eddy current loss. They are made up of thin laminated sheet & are insulated from each other. Finally the solid structure is pressed to remove presence of air gap.

**Q.9 Explain the effect of cooling?**

**Ans.** To control the temp. of transformer we use some cooling mechanism like cooling fins. It is attached with tank to prevent the harmful effect of excessive temp.

**Q.10 Explain auto and audio transformer?**

**Ans.** It is smaller, lighter, cheaper as compared to dual winding transformer. In this single winding acts as primary & sec. winding. It does not provide electrical isolation.

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