

TWO MARKS

1. Define an ideal transformer.

100% efficient or no loss transformer is called ideal transformer.

2. Define voltage regulation of a transformer.

The regulation of a transformer is defined as reduction in magnitude of the terminal voltage due to load, with respect to the no load terminal voltage.

$$\% \text{ regulation} = \frac{|V_{2\text{onno load}}| - |V_{2\text{when loaded}}|}{|V_{2\text{onno load}}|} \times 100$$

3. What are the losses in transformer?

➤ Core or iron loss

➤ Copper loss

4. Why transformer rating in KVA?

The copper loss depends on current and iron loss depends upon voltage. Hence the total loss in a transformer depends upon volt-ampere (VA) only and not on the phase angle between voltage and current i.e., it is independent of load power factor. That is why the rating is given in KVA and not in KW.

5. What are the applications of transformer?

Transformers are used in,

➤ Transmission and distribution

➤ Radio and TV circuits, telephone circuits, control and instrumentation circuits.

6. Define all-day efficiency.

The ratio of the output in kwh to input in kwh of a transformer over a 24 hour period is known as all-day efficiency.

$$\eta_{\text{all-day}} = \frac{\text{kwh output in 24 hours}}{\text{kwh input in 24 hours}}$$

7. Write down the emf equation of single phase transformer.

Rms value of induced emf in the entire primary winding,

$$E_1 = 4.44f\Phi_m \times N_1$$

or

$$E_1 = 4.44fB_m A N_1$$

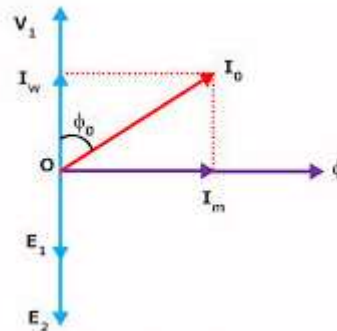
Similarly, Rms value of induced emf in the entire secondary winding,

$$E_2 = 4.44f\Phi_m \times N_2$$

or

$$E_2 = 4.44fB_m A N_2$$

8. State the condition for maximum efficiency of a transformer.
Iron loss = copper loss
9. Draw the vector diagram of a transformer on no load condition.



10. Classify the types of transformer based on core construction.
 1. Core type transformer
 2. Shell type transformer
 3. Berry type transformer

REVIEW QUESTIONS

PART A

1. What are the different types of transformer?
2. Write down the emf equation of single phase transformer.
3. Define transformation ratio.
4. Define an ideal transformer.
5. Draw the vector diagram of a transformer on no load condition.
6. Define voltage regulation of a transformer.
7. Why transformer rating in KVA?
8. What are the applications of transformer?
9. What are the losses in transformer?
10. Define all-day efficiency.
11. State the condition for maximum efficiency of a transformer.