

1. The flux involved in the e.m.f equation of a transformer has

- a) r.m.s value b) average value c) total Value d) maximum value

Ans: d

2. A transformer has N_1 and N_2 turns in primary and secondary windings respectively. Its secondary winding reactance of $x_2 \Omega$, when referred to primary, is

- a) $x_2 (N_2/N_1)^2$ b) $x_2 (N_2/N_1)$ c) $x_2 (N_1/N_2)^2$ d) $x_2 (N_1/N_2)$ e) $(x_2)^2 (N_1/N_2)$

Ans: c

3. A 400/200 V transformer has its L.V resistance of 0.02 per unit. The resistance when referred to h.v side is

- a) 0.02 p.u b) 0.04 p.u c) 0.01 p.u d) 0.08 p.u

Ans: a

4. The leakage flux in a transformer depends upon

- a) the applied voltage b) the frequency c) the load current d) the mutual flux

Ans: c

5. The efficiency of a transformer at full load 0.8 p.f lag is 90%. Its efficiency at full load 0.8 p.f lead will be

- a) less than 90% b) more than 90% c) 90% d) none of these

Ans: c

6. If P_c and P_{sc} represent core and full-load ohmic losses respectively, then maximum KVA delivered to the load corresponding to maximum efficiency is equal to rated VA multiplied by

- a) P_c/P_{sc} b) $(P_c/P_{sc})^2$ c) $\sqrt{P_c/P_{sc}}$ d) $(P_{sc}/P_c)^2$

Ans: c

7. The open-circuit test on a transformer is conducted to obtain

- a) the leakage impedances b) the ohmic loss c) hysteresis losses d) core losses

Ans: d

8. In a transformer

- a) both o.c and s.c tests are conducted on l.v side b) o.c test is conducted on h.v side and s.c test on l.v side
c) o.c test is conducted on l.v side and s.c test on h.v side d) both o.c and s.c tests are conducted on h.v side

Ans: c

9. In a transformer, the tapping are provided on

- a) h.v side at one end of the winding b) l.v side at one of the winding c) h.v side at the middle d) l.v side at the middle

Ans: c

10. Short circuit test on a single-phase transformer gave the following data :

30 V at 50 Hz, 20A, p.f = 0.2 lag

If s.c test is performed on 30 V, 25 Hz, then short-circuit current is

- a) decreased at p.f < 0.2 b) increased at p.f < 0.2 c) increased at p.f > 0.2 d) decreased at p.f > 0.2 e) same at p.f = 0.2

Ans: c

11. Open-circuit test on a single-phase transformer gave the following data :

230 V at 50 Hz, 2A, p.f = 0.2 lag. If open-circuit test is performed at 230 V, 45 Hz, then no-load current is

a) decreased at p.f > 0.2 b) decreased at p.f < 0.2 c) increased at p.f > 0.2 d) increased at p.f < 0.2 e) is same at p.f = 0.2
 Ans: d

12. An air-core transformer, as compared to iron-core transformer, has

a) less magnetic core loss b) more magnetic core loss c) no magnetic core loss d) less ohmic loss
 Ans: c

13. In case of a power transformer, the no-load current in terms of rated current is

a) 10% to 20% b) 2 to 6% c) 15 to 30% d) 30 to 50%
 Ans: b

14. Transformer maximum efficiency, for a constant load current, occurs at

a) 0.8 p.f b) zero p.f leading c) zero p.f lagging d) unity power factor
 Ans: d

15. With core type transformers, the limbs are stepped so as to

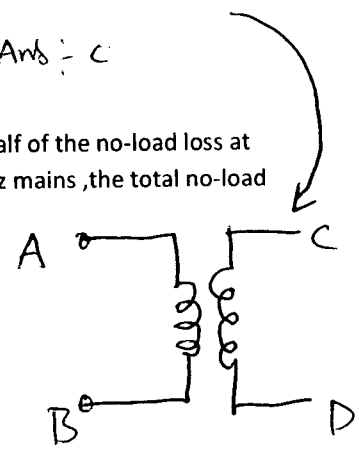
a) reduce the iron material and therefore iron loss b) reduce the conductor material and, therefore I^2R loss
 c) provide better cooling d) provide more mechanical strength to the core
 Ans: b

16. Two windings of a transformer are indicated by terminals AB and CD as shown in figure. When a voltage of 100V is applied across AB with BD short circuited a voltage of 200V appears across AC. The turns ratio from CD to AB is

a) 3 b) 1 c) 3 or 1 d) 2 or 1
 Ans: c

17. A 220/115 V, 25 Hz, 1-phase transformer has eddy current loss of 100 watt which is half of the no-load loss at rated applied voltage. If this transformer is used with primary connected to a 440V, 50 Hz mains, the total no-load loss would be

a) 300 W b) 600 W c) 1000 W d) 400 W
 Ans: b



18. Match the items on the left side with the most appropriate item on the right side

Type	Application
A) Power transformer	p) Thyristor firing circuits
B) Distribution transformer	q) Impedance Matching
C) Pulse transformer	r) At different localities of a city
D) Audio-frequency transformer	s) At generating stations

Ans: A-S
 B-Q
 C-P
 D-R

19. In a single-phase transformer, with subscripts 1 and 2 for primary and secondary windings:

a) $E_1 N_2 = E_2 N_1$ and $I_1 N_1 = I_2 N_2$ b) $E_1 N_1 = E_2 N_2$ and $I_1 N_1 = I_2 N_2$ c) $E_1 N_2 = E_2 N_1$ and $I_1 N_2 = I_2 N_1$
 Ans: a

20) The no load current in a transformer lags the applied voltage by

a) 90° b) about 75° c) 0° d) about 115°
 Ans: b