

UNIT-III

Single Phase Transformers:

Q1. The operating principle of a transformer is

- A. Self induction
- B. Mutual induction
- C. Electrostatic induction
- D. Conduction

Answer: B

Q2. A transformer works only with

- A. DC supply
- B. AC supply
- C. Battery
- D. Rectified DC

Answer: B

Q3. The SI unit of transformer rating is

- A. kW
- B. kVA
- C. HP
- D. kVAR

Answer: B

Q4. The two main types of single-phase transformers are

- A. Step-up and step-down
- B. Core type and shell type
- C. Power and distribution

D. Auto and isolation

Answer: B

Q5. The core of a transformer is made of

- A. Copper
- B. Cast iron
- C. Laminated silicon steel
- D. Aluminium

Answer: C

Q6. Laminations are provided to reduce

- A. Copper loss
- B. Eddy current loss
- C. Hysteresis loss
- D. Mechanical loss

Answer: B

Q7. Silicon steel is used to reduce

- A. Copper loss
- B. Mechanical loss
- C. Hysteresis loss
- D. Stray loss

Answer: C

Q8. The EMF equation of a transformer is

- A. $E=IR$
- B. $E=4.44 f N \Phi_m$
- C. $E=P\Phi ZN/60A$

D. $E=VIt$

Answer: B

Q9. The frequency of secondary EMF is

- A. Half of primary
- B. Double
- C. Same as primary
- D. Zero

Answer: C

Q10. The turns ratio is defined as

- A. I_2/I_1
- B. N_2/N_1
- C. V_1/V_2
- D. P_{out}/P_{in}

Answer: B

Q11. A step-up transformer has

- A. Equal turns
- B. More primary turns
- C. More secondary turns
- D. No secondary

Answer: C

Q12. A step-down transformer has

- A. More secondary turns
- B. Fewer secondary turns
- C. Equal turns

D. Infinite turns

Answer: B

Q13. No-load current is about

- A. 50%
- B. 100%
- C. 2–5% of full-load current
- D. 25%

Answer: C

Q14. On no-load, transformer draws current mainly for

- A. Load
- B. Heating
- C. Magnetization
- D. Power factor correction

Answer: C

Q15. The no-load power factor is

- A. Unity
- B. Leading
- C. Low and lagging
- D. Zero

Answer: C

Q16. Core losses consist of

- A. Copper and friction
- B. Hysteresis and eddy current losses
- C. Stray and dielectric

D. Brush losses

Answer: B

Q17. Copper loss depends on

- A. Voltage
- B. Frequency only
- C. Load current
- D. Core material

Answer: C

Q18. At no-load, copper loss is

- A. Maximum
- B. Very small
- C. Equal to core loss
- D. Zero always

Answer: B

Q19. The flux in a transformer core is

- A. Constant
- B. Alternating
- C. Rotating
- D. Pulsating DC

Answer: B

Q20. The primary winding is connected to

- A. Load
- B. Supply
- C. Earth

D. Capacitor

Answer: B

Q21. The secondary winding supplies

A. Supply

B. Exciter

C. Load

D. Battery

Answer: C

Q22. Transformer action requires

A. Constant flux

B. Changing magnetic flux

C. Mechanical rotation

D. DC field

Answer: B

Q23. The efficiency of a transformer is highest near

A. No load

B. Half load

C. Full load

D. Zero load

Answer: C

Q24. Maximum efficiency occurs when

A. Copper loss > Core loss

B. Copper loss = Core loss

C. Core loss = 0

D. Voltage is max

Answer: B

Q25. Phasor diagram represents

- A. Construction
- B. Losses
- C. Magnitude and phase relationship
- D. Cooling

Answer: C

Q26. On inductive load, secondary current

- A. Leads voltage
- B. Lags voltage
- C. In phase
- D. Zero

Answer: B

Q27. The voltage regulation of a transformer depends on

- A. Core area
- B. Frequency only
- C. Load and power factor
- D. Oil level

Answer: C

Q28. A distribution transformer is designed for

- A. Maximum speed
- B. High all-day efficiency
- C. Minimum cost only

D. High frequency

Answer: B

Q29. Power transformers are generally used in

- A. Homes
- B. Transmission substations
- C. Laboratories only
- D. Battery chargers

Answer: B

Q30. An isolation transformer usually has turns ratio

- A. 2:1
- B. 10:1
- C. 1:1
- D. 1:2

Answer: C

Q31. Transformer oil is used for

- A. Lubrication
- B. Cooling and insulation
- C. Painting
- D. Cleaning

Answer: B

Q32. Breather contains

- A. Sand
- B. Silica gel
- C. Carbon

D. Oil

Answer: B

Q33. The ideal transformer has efficiency of

- A. 90%
- B. 95%
- C. 98%
- D. 100%

Answer: D

Q34. Core-type transformer has windings

- A. On one limb only
- B. On two limbs
- C. Outside core
- D. Not on core

Answer: B

Q35. Shell-type transformer has windings

- A. On outer limb
- B. On central limb
- C. On tank
- D. Separated

Answer: B

Q36. The induced EMF is proportional to

- A. Resistance
- B. Frequency, turns and flux
- C. Current

D. Power factor

Answer: B

Q37. Transformer has no

A. Core

B. Windings

C. Moving parts

D. Tank

Answer: C

Q38. A transformer cannot operate on DC because

A. High current only

B. No changing flux is produced

C. Low voltage

D. High frequency

Answer: B

Q39. The main application of a step-up transformer is

A. Battery charging

B. Power transmission

C. Welding

D. Electroplating

Answer: B

Q40. The main application of a step-down transformer is

A. Transmission

B. Distribution to consumers

C. Generation

D. Traction

Answer: B