

Unit-5

Parallel Operation, Auto Transformers & Poly-phase Transformers

Q1. For successful parallel operation, transformers should have

- A. Different polarity
- B. Same polarity
- C. Different frequency
- D. Different phase sequence

Answer: B

Q2. Unequal voltage ratios in parallel operation cause

- A. Higher efficiency
- B. Circulating current
- C. Lower flux
- D. Zero current

Answer: B

Q3. Parallel operation increases

- A. Core loss
- B. Load sharing and reliability
- C. Frequency
- D. Turns ratio

Answer: B

Q4. Load sharing depends mainly on

- A. Core area
- B. Percentage impedance
- C. Oil level
- D. Frequency

Answer: B

Q5. Auto transformer has

- A. Two isolated windings
- B. Single continuous winding
- C. Three windings
- D. No winding

Answer: B

Q6. Auto transformer provides

- A. Complete isolation
- B. Electrical connection between primary and secondary
- C. DC output
- D. Mechanical coupling

Answer: B

Q7. Main advantage of auto transformer is

- A. Higher losses
- B. Copper saving
- C. Electrical isolation
- D. Large size

Answer: B

Q8. Compared to two-winding transformer, auto transformer is

- A. Larger
- B. Smaller and cheaper
- C. Heavier
- D. Less efficient

Answer: B

Q9. Auto transformer is not preferred where

- A. Voltage control
- B. Electrical isolation is required
- C. High efficiency
- D. Low cost

Answer: B

Q10. Equivalent circuit of auto transformer is similar to

- A. DC motor
- B. Two-winding transformer
- C. Alternator
- D. Rectifier

Answer: B

Q11. Y/Y connection is commonly used for

- A. Battery charging
- B. High-voltage transmission
- C. DC supply
- D. Traction

Answer: B

Q12. Δ/Δ connection can continue operation with

- A. Scott connection
- B. Open- Δ
- C. Zig-zag
- D. Star point

Answer: B

Q13. Open- Δ connection uses

- A. One transformer
- B. Two transformers
- C. Three transformers
- D. Four transformers

Answer: B

Q14. Open- Δ can supply approximately

- A. 25%
- B. 50%
- C. 57.7% of Δ - Δ rating
- D. 100%

Answer: C

Q15. Δ/Y connection is widely used for

- A. Rectifiers
- B. Step-up and distribution
- C. Battery chargers

D. UPS only

Answer: B

Q16. Y/ Δ connection is often used for

- A. Step-down transformers
- B. DC circuits
- C. Motors only
- D. Heating

Answer: A

Q17. Scott connection converts

- A. 1-phase to DC
- B. 3-phase to 2-phase
- C. DC to AC
- D. 2-phase to DC

Answer: B

Q18. Scott connection requires

- A. One transformer
- B. Two transformers
- C. Three transformers
- D. Four transformers

Answer: B

Q19. Three-phase transformers are preferred because

- A. They are economical
- B. They use more copper

- C. Need more space
- D. Lower efficiency

Answer: A

Q20. The neutral is available in

- A. Δ connection
- B. Y connection
- C. Open Δ
- D. Scott

Answer: B

Q21. Δ connection provides a path for

- A. Load current only
- B. Third harmonic currents
- C. DC current
- D. Leakage

Answer: B

Q22. The line voltage in star connection is

- A. Equal to phase
- B. Half phase
- C. $\sqrt{3}$ times phase voltage
- D. Twice phase

Answer: C

Q23. The line current in delta connection is

- A. Equal phase

- B. Half phase
- C. $\sqrt{3}$ times phase current
- D. Twice phase

Answer: C

Q24. Auto transformers are commonly used as

- A. Rectifiers
- B. Voltage regulators
- C. Oscillators
- D. Inverters

Answer: B

Q25. Copper saving in auto transformer is due to

- A. Cooling
- B. Common winding
- C. Core shape
- D. Oil

Answer: B

Q26. The major disadvantage of auto transformer is

- A. High copper loss
- B. No electrical isolation
- C. Large size
- D. Low efficiency

Answer: B

Q27. For parallel operation, phase sequence should be

- A. Reversed
- B. Same
- C. Random
- D. Not important

Answer: B

Q28. Transformers in parallel should have

- A. Different polarity
- B. Equal polarity
- C. Different frequency
- D. Different ratings only

Answer: B

Q29. Unequal impedance causes

- A. No effect
- B. Improper load sharing
- C. Higher voltage
- D. Lower frequency

Answer: B

Q30. Three-phase transformer bank consists of

- A. One transformer
- B. Three single-phase transformers
- C. Two transformers
- D. Four transformers

Answer: B

Q31. Δ/Δ connection is suitable for

- A. Lighting only
- B. Industrial loads
- C. DC loads
- D. Electronics only

Answer: B

Q32. Y/Y connection may require

- A. No winding
- B. Tertiary winding
- C. Battery
- D. Rectifier

Answer: B

Q33. Open- Δ is also called

- A. T-T
- B. V-V connection
- C. Y-Y
- D. Scott

Answer: B

Q34. Scott connection is used for

- A. DC motors
- B. Electric traction (2-phase)
- C. Lighting
- D. UPS

Answer: B

Q35. The rating of Open- Δ bank compared to Δ - Δ is

- A. 100%
- B. 86.6%
- C. 57.7%
- D. 33%

Answer: C

Q36. Auto transformer efficiency is generally

- A. Lower
- B. Higher
- C. Same as motor
- D. Zero

Answer: B

Q37. In an auto transformer, power transfer is

- A. Only inductive
- B. Conductive and inductive
- C. Only conductive
- D. Mechanical

Answer: B

Q38. A three-phase transformer is mainly used for

- A. Battery charging
- B. Power transmission and distribution
- C. Signal circuits
- D. Electroplating

Answer: B

Q39. Scott connection secondary outputs are

- A. 180° apart
- B. 90° apart
- C. 30° apart
- D. 0° apart

Answer: B

Q40. Parallel operation improves

- A. Losses
- B. Continuity of supply
- C. Frequency
- D. Voltage ratio

Answer: B