

UNIT-IV

Gas Insulated Substations (GIS)

1. GIS stands for:
A) Gas Insulated System
B) Gas Insulated Substation
C) General Insulated Station
D) Gas Integrated System
Answer: B
2. The insulating gas commonly used in GIS is:
A) Nitrogen
B) Oxygen
C) SF₆
D) Hydrogen
Answer: C
3. SF₆ gas is preferred because of its:
A) Low dielectric strength
B) High dielectric strength
C) High conductivity
D) Low insulation capability
Answer: B
4. One major advantage of GIS over AIS is:
A) Larger space requirement
B) Compact size
C) Higher maintenance
D) Lower reliability
Answer: B
5. GIS requires approximately:
A) More land than AIS
B) Same land as AIS
C) Much less land than AIS
D) Double the land of AIS
Answer: C
6. Which type of GIS is installed completely inside a building?
A) Indoor GIS
B) Outdoor GIS
C) Hybrid GIS
D) Mobile GIS
Answer: A
7. A Hybrid GIS combines features of:
A) GIS and Thermal Plant
B) AIS and GIS
C) GIS and Nuclear Plant

D) AIS and HVDC

Answer: B

8. The main conductor in GIS is enclosed within:

A) Oil-filled tank

B) Vacuum chamber

C) Grounded metallic enclosure

D) Wooden structure

Answer: C

9. In GIS, bus bars are generally:

A) Open conductors

B) Gas insulated conductors

C) Bare aluminum strips

D) Oil immersed conductors

Answer: B

10. GIS is most suitable for:

A) Rural open areas

B) Congested urban areas

C) Agricultural lands only

D) Remote villages only

Answer: B

11. Which of the following is a drawback of GIS?

A) Compactness

B) High Initial Cost

C) High Reliability

D) Reduced Maintenance

Answer: B

12. GIS provides better protection against:

A) Weather conditions

B) Fuel shortages

C) Voltage regulation problems

D) Frequency variations

Answer: A

13. The enclosure of GIS is generally made of:

A) Wood

B) Plastic

C) Steel or Aluminum Alloy

D) Concrete

Answer: C

14. Which equipment is enclosed within SF₆ gas in GIS?

A) Circuit Breaker

B) Bus Bar

C) Disconnect Switch

D) All of the Above

Answer: D

15. The probability of faults in GIS is:
A) High
B) Moderate
C) Very Low
D) Unpredictable
Answer: C
16. GIS is particularly advantageous in areas with:
A) Plenty of land
B) High pollution and space constraints
C) Low population density
D) Large agricultural fields
Answer: B
17. Compared to AIS, GIS has:
A) Lower reliability
B) Higher reliability
C) Same reliability always
D) No reliability advantage
Answer: B
18. The maintenance requirement of GIS is generally:
A) Very High
B) High
C) Low
D) Extremely Frequent
Answer: C
19. Which substation occupies less area for the same voltage level?
A) AIS
B) GIS
C) Both Equal
D) Indoor AIS
Answer: B
20. The major reason for using GIS in metropolitan cities is:
A) Cheap Construction
B) Easy Expansion
C) Space Saving
D) Availability of Water
Answer: C

Fill in the Blanks

1. GIS stands for Gas Insulated _____.
Answer: Substation
2. The insulating gas commonly used in GIS is _____.
Answer: SF₆

3. SF₆ stands for Sulphur _____.
Answer: Hexafluoride
4. GIS requires significantly less _____ area compared to AIS.
Answer: Land
5. The conductor in GIS is enclosed inside a metallic _____.
Answer: Enclosure
6. GIS offers higher _____ strength than air-insulated systems.
Answer: Dielectric
7. The most common type of GIS installed inside buildings is _____ GIS.
Answer: Indoor
8. A combination of AIS and GIS is known as _____ GIS.
Answer: Hybrid
9. GIS is particularly suitable for _____ urban locations.
Answer: Congested
10. The bus bars in GIS are insulated using _____ gas.
Answer: SF₆
11. GIS equipment is protected from environmental _____.
Answer: Conditions
12. The probability of faults in GIS is comparatively _____.
Answer: Low
13. GIS has a higher _____ cost than AIS.
Answer: Initial
14. The metallic enclosure in GIS is connected to _____ potential.
Answer: Earth
15. GIS provides better operational _____ than AIS.
Answer: Reliability
16. Installation of GIS requires skilled _____.
Answer: Personnel
17. SF₆ gas is chemically _____ under normal operating conditions.
Answer: Stable
18. GIS generally requires less _____ than AIS.
Answer: Maintenance
19. AIS uses _____ as the insulating medium.
Answer: Air
20. The major advantage of GIS over AIS is its _____ design.
Answer: Compact