

This note is for theoretical topics only. Refer class sessions for numerical & application-level topics

1. Earthing is necessary to give protection against
 - a) Overloading
 - b) Danger of electric shock
 - c) High temperature of the conductors
 - d) Voltage fluctuation
2. Which of the following system produces highest ground fault current when a fault to ground occurs:
 - a) Solid grounding system
 - b) Ungrounded system
 - c) Resistance grounding system
 - d) Reactance grounding system
3. When the 3-phase system is not grounded and if Single Line to Ground fault occurs, the voltage of the other two healthy phases will:
 - a) Increases
 - b) Decreases
 - c) Remains unaffected
 - d) Depend upon load
4. In a ungrounded system, if a line to ground fault occurs on one phase, the charging currents (capacitive currents) flowing through the other two healthy phases will be ___ times the normal value:
 - a) 3
 - b) 2
 - c) 1.5
 - d) 6
5. Which of the following solution is used to reduce the earth's resistivity?
 - a) Sodium Sulphate
 - b) Sodium Chloride
 - c) Calcium Carbonate
 - d) Calcium Chloride
6. Which of the following type of grounding system has the highest probability for escalation of ground fault to phase to phase and three phase arcing faults, particularly for low voltage system:
 - a) Solid grounding
 - b) Resistance grounding
 - c) Reactance grounding
 - d) All the options are correct
7. In which of the following system, identification of fault is tedious:
 - a) Resistance grounding
 - b) Solid grounding
 - c) Reactance grounding
 - d) Ungrounding
8. Earthing/Grounding resistor for high resistance grounding shall be designed such that the ground fault current limit is _____ than the system's total capacitance to ground charging current in order to avoid overvoltages:
 - a) Greater
 - b) Lesser
 - c) Equal
 - d) Cannot be specified with the current limit
9. High voltages originated due to Line to Ground faults in ungrounded system will damage which of the following:
 - a) Insulation damage
 - b) Conductors melt down
 - c) Will not have any effect
 - d) Fires
10. The ungrounded system, is a _____ grounding system:
 - a) Capacitance
 - b) Inductance
 - c) Resistance

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- d) Combination of Inductance and Resistance directly to the earth electrode, and the ground surface potential where
11. High Resistance grounding limits ground fault current to
- 100 A
 - 150 A
 - 25 A
 - 200 A
12. In any system (grounding or ungrounding), a coupling exists between the system conductors and the adjacent grounding surfaces:
- Capacitance
 - Inductance
 - Resistance
 - Any of the above
13. The ground resistance recommended by IEEE is less than
- 5 ohms
 - 15 ohms
 - 100 ohms
 - 50 ohms
14. In order to achieve Continuity of the operation even during fault condition which type of the configuration is preferred?
- Grounded System
 - Ungrounded system
 - Both a & b
 - Neither a nor b
15. Step potential is associated with the
- equipment and human body contact potential difference
 - potential between the two feet of a person separated by about 1 meter
 - maximum possible grid potential
 - voltage difference between an exposed metal object, connected
16. Electrical resistivity in earthing is
- inversely proportional to the depth of grounding / earthing rod into the ground
 - proportional to the depth of grounding / earthing rod into the ground
 - not related to the depth of grounding / earthing rod into the ground
 - cannot be generalized
17. A delta-delta connected transformer is grounded with the help
- zig-zag transformer
 - delta-star transformer
 - delta-delta transformer
 - any of the above
18. Solid grounding can be adopted for voltages below
- 100 V
 - 230 V
 - 415 V
 - 750 V
19. Earthing transformers are
- Step down Transformer
 - Step up Transformer
 - Auto Transformer
 - All the above
20. When are earthing transformers used in an electrical system when
- protection is required
 - neutral is unavailable
 - delta-delta transformers are used
 - All of these

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21. In a star connected system without neutralgrounding, zero sequence currents are
- Same as r.m.s. value of phasecurrents
 - Same as peak value of phasecurrents
 - Zero
 - Phasor sum of phase currents
22. The different parts of an electrical system which are earthed will be at_____potential
- Infinite
 - zero
 - arbitrary
 - Step
23. The advantage of neutral Earthing is
- Lightning protection
 - Elimination of arcing grounds
 - Simplified earth fault protection
 - All of the above
24. Earth Resistance recommended for smallpower stations _____
- 5 ohms
 - 8 ohms
 - 10 ohms
 - 1 ohm
25. During occurrence of a fault, the earthpotential will____:
- Increases
 - Decreases
 - Remains unaffected
 - Depend upon load
26. The kVA and size earthing transformer compared to ordinary transformers is
- same
 - less
 - greater
 - Any of the above
27. Under fault conditions current flowing through the grounding transformer is
- very large
 - zero
 - some small non-zero value
 - depends on load
28. The secondary of an earthing transformer is usually
- star
 - Delta
 - Star or delta
 - Star without neutral
29. The primary of an earthing transformer is
- star
 - Delta
 - Star or delta
 - Star without neutral
30. Earth electrode has
- medium resistance
 - highest possible resistance
 - lowest possible resistance
 - only earth wire resistance matters

1.	B	16.	A
2.	A	17.	A
3.	A	18.	D
4.	A	19.	A
5.	B	20.	D
6.	A	21.	C
7.	D	22.	B
8.	A	23.	D
9.	A	24.	D
10.	A	25.	C
11.	C	26.	B
12.	A	27.	A
13.	A	28.	B
14.	B	29.	A
15.	B	30.	C

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