

TI21 - Pre-Instructional Survey

Name _____ Date _____

1. Impedance is measured in:
 - A. Farad's
 - B. Ohm's
 - C. Mho's
 - D. Henry's

2. National Electrical Code (NEC) Article _____ governs grounding?
 - A. 240
 - B. 250
 - C. 430
 - D. 301

3. Capacitance is _____ based.
 - A. Voltage
 - B. Resistance
 - C. Current
 - D. Henry

4. What are the three major distinct parts to look at when solving electrical noise problems?
 - A. Source, path, conductors
 - B. Conductors, transmitters, load
 - C. Coils, capacitors, amplifiers
 - D. Source, path, target

5. A noise source can be isolated by:
 - A. Sources can not be isolated
 - B. Enclosing it in a fiber glass enclosure
 - C. Enclosing it a NEMA 4 enclosure
 - D. Enclosing it in metal enclosure

6. An opto isolator can be used to:
 - A. Isolate 115VAC power to equipment
 - B. Can not be used to isolate
 - C. Isolate signals
 - D. Isolate analog signals
7. A ground loop must have:
 - A. An earth path
 - B. Zero potential between two points in the circuit
 - C. Some resistance between two points in the circuit
 - D. An inductor or capacitor in the circuit
8. The equipment grounding conductor connections:
 - A. Must be permanently bonded from the equipment to the service entrance ground
 - B. Can be connected with wire nuts from the equipment to the service entrance ground
 - C. Must be connected to the grounded conductor at all equipment
 - D. Shall be permitted to be as determined by the authority having jurisdiction.
9. The amount of _____ is what kills:
 - A. Resistance
 - B. Voltage
 - C. EMF
 - D. Current
10. An isolated ground is one that is:
 - A. Not connected to any ground
 - B. Connected to an opto isolator
 - C. Connected to the Service entrance ground with an insulated wire
 - D. Connected to the grounded conductor
11. The greatest Electrical noise affect of a capacitance field is determined by the:
 - A. Distance from the source
 - B. Dielectric of the air
 - C. Insulation of the wire
 - D. numbers of lines of magnetic force

12. The law that describes the relationship between voltage, resistance, and current is called:
- A. Ohm's Law
 - B. Faraday's Law
 - C. Law of Relativity
 - D. Pythagorean Theory
13. Power Factor is the:
- A. The ratio of the amount of current to the voltage
 - B. The ratio of the real power consumed versus the apparent power
 - C. The ratio of the formula $E=IR$ to $E=EI$
 - D. The ratio of the transformer primary windings to the secondary windings
14. Electrical noise is:
- A. Unwanted or interfering electrical vibrations
 - B. Unwanted or interfering resistance in ground circuits
 - C. Unwanted and interfering electrical vibrations
 - D. Unwanted or interfering current or voltage affecting an electrical system
15. Twisted pair conductors inherently reduces / cancels:
- A. Normal mode noise
 - B. Ringing mode noise
 - C. Common mode noise
 - D. Audio interference noise
16. Triplen harmonics cause the _____ of a 4 wire 3 Φ circuit to overheat.
- A. Neutral
 - B. Phase conductors
 - C. Insulation
 - D. Equipment grounding conductor
17. Ferrite beads act as a (an) _____ in the circuit.
- A. Capacitor
 - B. Inductor
 - C. Shunt
 - D. Open

18. A balanced signal circuit, such as ANSI 485, acts as a:
- A. Multiplier
 - B. Differential Amplifier
 - C. Signal divider
 - D. Signal router
19. Which of the following is one of the causes of noise in instrumentation?
- A. Shielding
 - B. Frequency
 - C. Calibration
 - D. Ground loop
20. A cable designated as F/UTP means :
- A. Foiled inner sheath, unshielded outer sheath ,Twisted pair
 - B. Braided outer sheath, foiled inner sheath, twisted pair
 - C. Foiled outer sheath, unshielded inner sheath, twisted pair
 - D. Foiled inner sheath, unipolyester outer sheath, twisted pair
21. An enclosure made of _____ is best for shielding against EMI.
- A. Ferrous metal
 - B. Fiber glass
 - C. PCV
 - D. No enclosure shields against EMI
22. RFI is an electrical noise in the form of :
- A. Capacitive waves
 - B. Paired signals
 - C. Magnetic waves
 - D. RS – 232 signals
23. Signal Reference Ground (SRG) is most often used in a computer room to:
- A. Connect all power cables to one power source
 - B. Connect all grounds together on a common grid
 - C. Connect the equipment ground of all devices together to prevent an unsafe build up of voltage between the devices
 - D. Provide a common area for all devices

24. The grounded conductor is also the:
- A. Hot conductor
 - B. Green or bare wire
 - C. Shield wire on a signal cable
 - D. Neutral conductor
25. As frequency increases in an magnetic inductive circuit the inductive reactance will:
- A. Increase
 - B. Remain the same
 - C. Decrease
 - D. Frequency does not affect it

TI21- Pre-Instructional Survey Answer Sheet

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