

TEHCNICAL SUBJECTS

INSTRUCTION: Select the correct answer for each of the following questions. Mark only one answer for each item by shading the box corresponding to the letter of your choice on the answer sheet provided. STRICTLY NO ERASURES ALLOWED. Use pencil No. 1 only.

MULTIPLE CHOICE

1. A 6-volt lead-acid battery has an internal resistance of 0.01 ohm. How much current will flow if the battery has a short circuit?
a. 60A **b. 600A** c. infinity d. zero
2. A binary alloy of copper and zinc.
a. Bronze **b. Brass** c. Alnico d. Steel
3. The resistance of a conductor when its temperature is increased,
a. increases b. remain constant c. varies d. decreases
4. A voltage source of 20V is applied across the terminals of a 2.5-ohm rheostat. Calculate the power dissipated in the rheostat?
a. **160W** b. 100W c. 150W d. 180W
5. Unit of electrical pressure is
a. watt b. ampere c. ohm **d. volt**
6. Two resistors of resistances 5 ohms and 7 ohms are connected in series across a 60-volt source. What is the power absorbed in the 5-ohm resistor?
a. 50 watts b. 25 watts c. 125 watts d. 100 watts
7. When using ohms law, E divided by I would solve for
a. watts b. amperage c. voltage **d. resistance**
8. In resistance color coding, red color is assigned to a value
a. 3 b. 0 **c. 2** d. 1
9. An electric iron takes 3 ½ amps. If the heating element has a resistance of 40 ohms, what is its power consumption?
a. 0.45 kW **b. 0.49 kW** c. 0.35 kW d. 0.51 kW
10. Another name for a secondary cell.
a. Wet cell **b. Storage cell** c. Dry cell d. Disposable cell
11. Two resistances of 8 and 10 ohms respectively are connected in parallel and take a total current of 9 A. What is the current flowing in the 8-ohm resistance?
a. 5 A b. 4 A c. 6 A d. 3 A
12. What is the resistance must be connected across a 4-ohm resistor in order to give an equivalent resistance of 3 ohms?
a. 10 ohms b. 8 ohms c. 12 ohms **d. None of these**
13. How is voltmeter connected in a circuit?
a. Connect in short circuit across the load
b. Connect in shunt across the load
c. Connect in series across the load
d. Connect in open circuit with the load

TEHCNICAL SUBJECTS

14. Component of an atom that doesn't have any electrical charge.
a. Electron b. Proton **c. Neutron** d. None of these
15. A lead-acid cell is constructed in multiple for the purpose of _____.
a. increasing the emf of the cell
b. increasing the capacity of the cell
c. increasing the internal resistance of the cell
d. all of these
16. A measuring instrument used to measure the diameter of circular wires in mills.
a. Micrometer b. Millimeter **c. Wire gauge** d. Milliammeter
17. The electron in the last orbit of an atom are called
a. bound electrons b. free electrons **c. valence electrons** d. charged electrons
18. A 400 MCM cable has 37 strands. What is the diameter if each strand in mills?
a. 10.81 b. 1081 **c. 104** d. 108
19. The copper field coils of a motor was measured at 21°C and found to have a resistance of 68 ohms. After the motor has run for a given time, the resistance is found to be 90 ohms. What is the hot temperature of the winding?
a. 106.36°C b. 166.30°C c. 103.66°C **d. None of these**
20. A secondary cell is charged with a constant current of 10 A for 10 hours. How much charge is accumulated?
a. 100 coulombs b. 360,000 coulombs c. 100,000 coulombs d. 60,000 coulombs
21. A cell whose emf is 1.45 V has an internal resistance of 4 ohms. What current will flow if this cell is connected across a 1 – ohms resistor?
a. 0.4 A b. 0.2 A c. 0.5 A **d. 0.3 A**
22. What is the diameter of a copper wire having a cross sectional area of 3,969 CM?
a. 1.6 mm b. 7.8 mills c. 0.6 inch **d. None of these**
23. When n equal resistors are connected in series to a source of emf E volts, each having a resistance of R ohms, which of the following statements is true?
a. The voltage drop across one of the resistor is equal to E/n
b. The equivalent resistance of the circuit is equal to nR
c. The current through each of the resistor is the same
d. All of these
24. Give an example of an electrical conductor.
a. Brass b. Asbestos c. Slate d. Latex
25. A small light bulb with a resistance of 1000 ohms is connected across a 120-V line. What is the current through the bulb?
a. 1.2 A **b. 0.12 A** c. 0.012 A d. 12 A
26. Practically all batteries have a nominal rating based on the ____ hour rate of discharge.
a. 8 **b. 24** c. 16 d. 12
27. The energy stored in an electrolytic cell is
a. an electrical b. a magnetic c. a mechanical **d. a chemical**
28. The most common usage of resistors in electronic circuits is to _____.
a. limit a current b. introduce a voltage drop

TEHCNICAL SUBJECTS

44. Three 120-ohm resistor are connected in series-parallel. The equivalent resistance of the combination is ____.
- a. 360 ohms **b. 80 ohms** c. 180 ohms d. 40 ohms
45. A 25-W incandescent bulb rated at 120 V and operated on a 120 V line has burnt out and has to be replaced as soon as possible. There are several lamps available but not of the same rating. Which of the bulbs below should be used to approximate the power consumption of the busted bulb?
- a. 20 watts, 110 volts** b. 100 watts, 240 volts
c. 50 watts, 240 volts d. 75 watts, 220 volts
46. A resistor of 3 ohms is connected in parallel with one of 2-ohm resistance. If the combination is connected in series with a 4-ohm resistor, what is the equivalent resistance of the whole combination of three resistors?
- a. 6.4 ohms b. 5.8 ohms c. 4.5 ohms **d. 5.2 ohms**
47. A substance that cannot be decomposed any further by a chemical reaction.
- a. Ion **b. Element** c. Molecule d. None of these
48. A resistance of 4 Ohms is connected in series to a parallel connection of two 8-ohm resistance. The total resistance is
- a. 6 ohms b. 20 ohms **c. 8 ohms** d. 12 ohms
49. One horsepower is equivalent to how many watts?
- a. 746** b. 764 c. 674 d. None of these
50. A resistor of 4-ohm resistance is connected in parallel with a series combination of two resistors, 3-ohm and 1-ohm respectively. What is the equivalent resistance of the whole combination?
- a. 8 ohms b. 3 ohms c. 5 ohms **d. None of these**

*** END ***

SUBMIT THIS TEST QUESTION SET TOGETHER WITH THE ANSWER SHEET TO YOUR WATCHERS. BRINGING THE TEST QUESTION SET OUT OF THE ROOM WILL BE A GROUND FOR DISCIPLINARY ACTION.