Hohete Tibeb Share Ethio - Parents' Physics Test yourself for Grade 8

2019/20

Grade 7 Unit 8
Electricity

1. What would happen to the leaves of a negatively charged electroscope when a negatively charged body approaches to the cap of the electroscope?
   A. diverge B. collapse C. remain the same D. collapse then diverge
2. Which one of the following is not magnetic substance?
   A. gold B. cobalt C. steel D. iron
3. By moving the North pole of a magnet towards the North pole of another magnet you may
   A. increase the force of attraction B. decrease the force of repulsion
   C. increases the force of repulsion D. decrease the of attraction
4. Which one of the following statements is **incorrect**?
   A. secondary cells are rechargeable
   B. volt is the SI unit of potential difference
   C. chemical cells convert electrical energy into chemical energy
   D. battery is a combination of cells
5. A neutral body may be charged negatively by
   A. removing protons from it B. removing electrons from it
   C. by adding protons to it D. by adding electrons to it
6. How long will it take to pass a charge of 80 C in a conductor if the current through the conductor is 4 A?
   A. 20 s B. 32 s C. 50 s D. 320 s
7. Which one of the following is **not** the use of electroscope?
   A. to charge body by stroking
   B. to verify whether a body is conductor or insulator
   C. to check whether a body is charged or not
   D. to check the sign of the charge
8. When the metal cap of a negatively charged electroscope is touched by a positively charged glass rod the leaves
   A. diverge more B. repel each other C. remain motionless
   D. collapse
9. A neural body is said electrically charged when
   A. gains an electron B. loss electrons
   C. loses or gains electrons D. net charge is zero
10. One of the following is not a secondary cell
    A. car battery B. dry cell C. accumulator D. storage cell
11. The process of making a magnet by stroking is
    A. magnetism B. magnetization C. Magnetic field D. magnetic materials
12. Among the following which one is a magnetic substance?

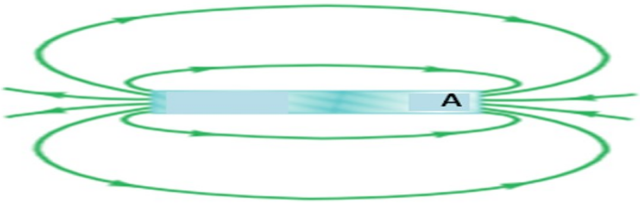
A. copper B. aluminum C. gold D. cobalt

13. Which one of the following statements is **correct**?
A. A magnet has two or more poles
B. A magnet attracts pieces of aluminum and steel
C. No matter what its shape or its size may be the two poles always exist in pairs
D. If a magnet is suspended freely, it always comes to rest with its ends pointing in a South - North direction.

14. The space around a magnet is
A. magnetic field B. magnetic lines C. magnetic compass D. magnetism

15. Which one of the following statement is **true**?
A. a magnet exerts force at a distance
B. magnetic lines of force can cross each other
C. magnetic lines of forces are drawn from South to North
D. the closeness of the magnetic field lines shows weak magnetic force

16. What is the pole of the magnet represented by letter A?



A. North B. South C. East D. West

17. Among the following which one is Horse – shoe magnet? **B**

A. 

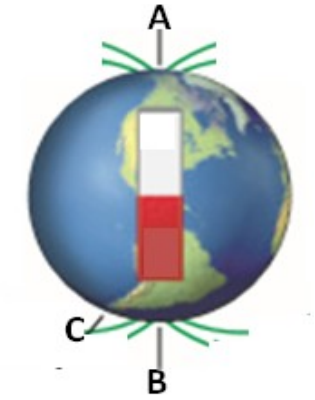
B. 

C. 

D. 

18. Which one of the following is **not** the use of magnets?
A. in compass B. to lift up steel or iron to higher place
C. to make a differential pulley D. to construct electric bell

19. Consider the Earth's magnetic field shown in the figure below.



Which letter (s) represents the South Pole of the Earth's magnetic field?

A. A B. B C. C D. B and C

20. Which particle does not have a charge?

A. electron B. neutron C. proton D. nucleus

21. Which one of the following statement is **true**?

A. charge is measured by a unit Ampere

B. a body in deficit of electrons is negatively charged

C. a neutral atom has excess protons than electrons

D. every matter is electrical in nature

22. The process of removing electric charges from a charged body is

A. making positively charged B. making negatively charged

C. discharging D. electrostatics

23. Tear pieces of paper into bits and put them on the table. Now rub the polythene rod with woolen cloths and bring it close to the bits of paper. What happens? Why it happens? It will

A. attract, because the charge on the pieces of paper is negative

B. repel, because the charge on the pieces of paper is positive

C. attract, because the charge on the polythene rod is positive

D. attract, because the pieces of paper is neutral

24. Consider a charged body that has surplus of electrons. If you bring this charged rod near the uncharged body it attracts the uncharged body. When the charged body touches the uncharged body, same negative charges transfer to the uncharged body and make it negatively charged. Then the two bodies repel each other, because they have the same charges. The process of charging a body is

A. rubbing B. sharing C. friction D. induction

25. Which one of the following statement is **correct**?

A. a neutral electroscope is used to detect the sign of charge on a charged body

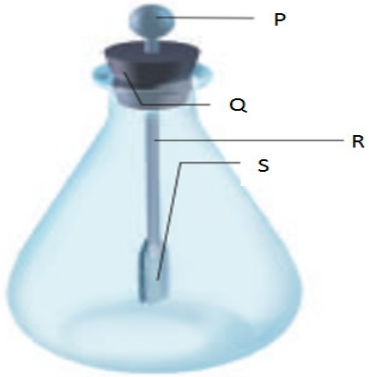
B. when uncharged glass rod brought near to the cap of a neutral electroscope the leaves will diverge

B. when uncharged glass rod brought near to the cap of a neutral electroscope the leaves will converge

D. a conductor can be charged

26. Consider the electroscope shown in the figure below. What are the parts of the electroscope

represented by P, Q, R, and S?



A. cap, insulator, brass rod, foil
B. brass rod, cap, foil, insulator
C. insulator, cap, brass rod, foil
D. brass rod, foil, cap, insulator

27. Which one of the following statement is **correct**?
A. like charges attract
B. unlike charges repel
C. positive and positive attract
D. opposite charges attract

28. The motion of electric charges is
A. Coulomb
B. potential difference
C. electric current
D. Ampere

29. A charge of 360 coulomb flows across a conductor in 2 minutes. What is the amount of current in the circuit?
A. 180 A
B. 720 A
C. 3 A
D. 0.33 A

30. Which one of the following statement is **true**?
A. battery is a combination of two or more cells
B. generator is a source of resistance
C. The unit of electrical resistance is Volt
D. An ammeter is used to measure potential difference

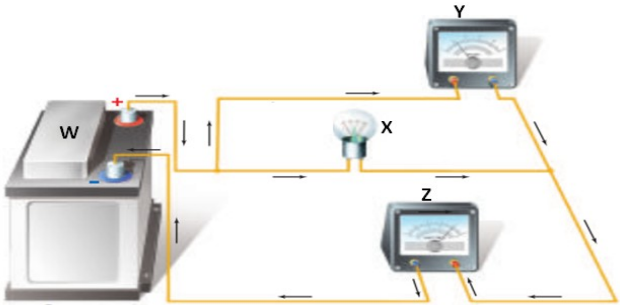
31. Among the following which one is **not** recharged to use again?
A. storage cell
B. dry cell
C. lead acid accumulator
D. car battery

32. The flow of current from positive to negative is
A. electron current
B. direct current
C. conventional current
D. alternating current

33. A pith ball is negatively charged. What happens when a positively charged body brought near to it?
A. they repel each other
B. they attract each other
C. share their charges and remain neutral
D. Nothing happens

34. Among the following which one has both a properties of magnetic material and electrical conductor?
A. iron and copper
B. steel and nickel
C. gold and silver
D. aluminum and iron

35. For the figure shown below what are the names of the apparatuses W, X, Y, and Z respectively represented in the circuit diagram shown below?



A. voltmeter, bulb, ammeter, battery B. bulb, battery, ammeter, voltmeter

C. battery, ammeter, bulb, voltmeter D. battery, bulb, voltmeter, ammeter

36. Which one of the following statement is **correct**?

A. a magnet suspended freely on the Earth's surface at its rest position pointing South – North direction

B. steel, nickel, cobalt, and aluminum are magnetic substances

C. every magnet has two poles

D. like poles attract each other and unlike poles repel each other

37. The North pole of a magnet is brought to a magnet whose pole is **A** the magnets are attract each other, and another magnet with pole **B** is brought to another magnet of South pole repel each other.

If you bring pole **A** and pole **B** of the two magnets, what can you say about the magnets?

A. attract B. repel C. first attract then repel D. first repel then attract

38. Which one of the following statement is **true**?

A. chemical cells are used to convert electrical energy to chemical energy

B. primary cells after using once can be used again

C. a lead acid accumulator cannot be recharged

D. when three cells are connected in series we call it battery

39. Which one of the following statement is **correct**?

A. conductors have very few free electrons

B. a simple electric circuit is used as a tester

C. conventional current is flow of electrons from negative to positive terminal

D. the unit of potential difference is Ampere

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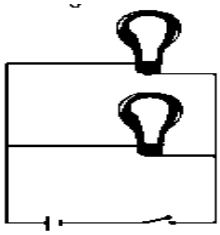
Physics Test yourself part I for Grade 8

2019/20

Grade 8
Unit 5

Electricity

1. The cross – sectional area of a metallic conductor is reduced by half while its length is doubled.
   How will its resistance change?
   A. increases by four fold B. remain the same
   C. doubled D. reduced by half
2. How many Joules of electrical energy transferred in a device which uses 40 v, 5 A current in 20 minutes?
   A. 240,000 B. 120,000 C. 24,000 D. 4,000
3. The magnetic field at the center of a solenoid is
   A. circular B. spiral C. straight D. oval
4. Good conductors have
   A. high resistance B. low resistance
   C. smaller cross – sectional area D. longer in size
5. Our radio uses 12 v source that we can plug into our electrical outlet that is 220 v. How can it works?
   A. it has a step up transformer B. it has step – down transformer
   C. it has resistance because voltage decreases D. it uses all voltage
6. If you have thicker wire what does it mean?
   A. faster flow of electrons B. slow flow of electrons
   C. no flow of electrons D. low amount of currents
7. A complete path for the flow of an electric current is
   A. electric circuit B. source of potential difference
   C. switches D. connecting wire
8. A fuse is always connected in a circuit in
   A. parallel B. series C. series – parallel D. parallel – series
9. Which one of the following is **false** about an electric current?
   A. it has a smaller unit milliAmpere B. it is a scalar physical quantity
   C. it is a derived physical quantity D. it is the rate of transfer of charge across a conductor
10. Consider a circuit diagram shown below. What is the problem on this circuit diagram?



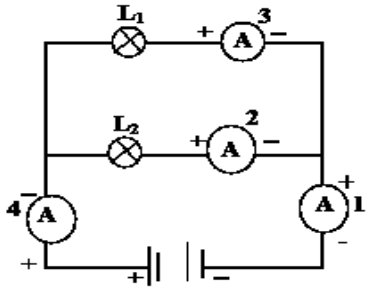
A. the positive of the source is connected to the base point of the bulb
B. the positive of the source is connected to the screw base of bulb
C. the negative of the source is connected to the screw base of the bulb
D. the source is connected properly to the base and screw point of the bulb

11. The measure of the opposition to the flow of an electric current is
A. charge B. current C. resistance D. potential difference

12. A charge of 1200 C is flowing across a conductor for 2 minutes. What is the current through this conductor?
A. 2400 A B. 600 A C. 10 A D. 1 A

13. A current of 20 A is flowing through a resistor of 5 Ω. What is the potential difference across the resistor?
A. 4 v B. 100 v C. 0.25 v D. 25 v

14. Consider the circuit diagram shown below. Which ammeter has more current?



A. 1 B. 2 C. 3 D. 2 and 3

15. The resistance of a conductor can be increased by
A. decreasing the resistivity B. increasing the area
C. increasing the temperature D. decreasing the length

16. A charge of 20 C is flowing across a resistor of 4 Ω for 10 seconds. What is the potential difference across the resistor?
A. 50 v B. 2 v C. 800 v D. 8 v

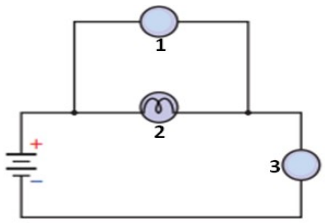
17. Two resistors 3 Ω and 7 Ω are connected in series, and the combination is connected across a potential difference of 10 v. What is the total current through the combination?
A. 3.3 A B. 1.4 A C. 1 A D. 30 A

18. The equivalent resistance of two resistors is 2 Ω when they are connected in parallel. If one of the resistor is 3 Ω, what is the value of the other resistor?
A. 9 Ω B. 5 Ω C. 6 Ω D. 1 Ω

19. An electric lamp is labeled as 200 v, 40 W. What is the resistance of the filament?

A. 5 Ω B. 0.2 Ω C. 8000 Ω D. 1000 Ω

20. Consider the following circuit diagram shown below. What are the names of the electrical appliances given in the numbers 1, 2, and 3?



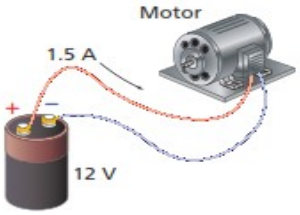
A. voltmeter, lamp, ammeter B. ammeter, lamp, voltmeter
C. ammeter, power supply, voltmeter D. rheostat, voltmeter, ammeter

21. A carbon resistor is represented as red, gray, and green. Find its resistance.

Color	**Code Number**	**Multiplier**	**Tolerance in %**
Black Brown Red Orange Yellow Green Blue Violet Gray White	0 1 2 3 4 5 6 7 8 9	1 10 100 1000 10000 100000 1000000 10000000 100000000 1000000000	- 1% 2% 3% 4% 5% 6% 7% 8% 9%
Gold Silver No Band		0.1	± 5% ± 10% ± 20%

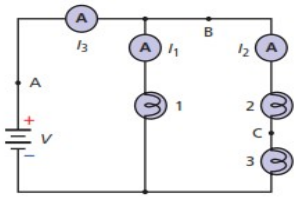
A. 28 MΩ B. 2.8 MΩ C. 280 MΩ D. 2800 MΩ

22. An electric motor is operated to a potential difference of 12 v, as shown in the figure below. How much power is delivered to the motor?



A. 18 W B. 8 W C. 0.125 W D. 96 W

23. For the circuit shown in the figure below, what is the current I_1, if the current I_3 is 6 A and I_2 is 4 A?



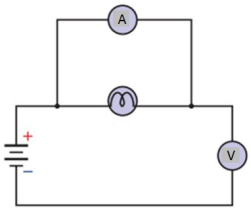
A. 10 A B. 1.5 A C. 2 A D. 0.66 A

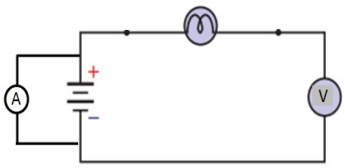
24. Which one of the following is **true** about voltage? It is
A. a vector physical quantity
B. supplied by a source of an electromotive force
C. the potential difference divided by resistance
D. measured by an instrument Ammeter

25. What is the potential difference between the ends of a resistor of 5 Ω, that flows a charge of 8 C in 2 seconds?
A. 20 v B. 80 v C. 3.2 v D. 1.25 v

26. Which connection is best to verify Ohm's law?

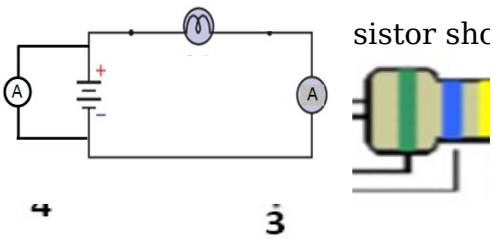
A.

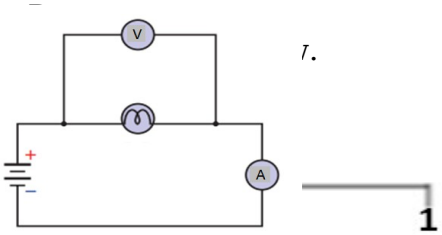




C.

27. Consic sistor shc .





The numbers 1, 2, 3, and 4 respectively are
A. first band, second band, tolerance, multiplier
B. first band, second band, multiplier, tolerance
C. multiplier, tolerance, second band, first band
D. tolerance, multiplier, second band, first band

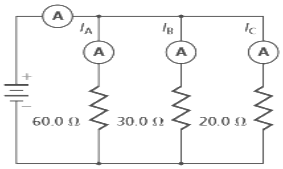
28. When a resistor of 3 Ω connected to an unknown resistor in parallel the equivalent resistance is 2 Ω. What is the value of the unknown resistor?
A. 2 Ω B. 6 Ω C. 4 Ω D. 1 Ω

29. Which one of the following statement is **correct**?

A. There are three kinds of electric charges.
B. Charges exert forces on other charges at a distance.
C. The force is stronger when the charges are far apart.
D. Like charges attract; opposite charges repel.

30. Which one of the following statement is **true** about voltage?
A. it is the measure of the ability to do work
B. it is a force
C. it is a vector physical quantity
D. it is measured by a voltmeter and is connected in series to a source

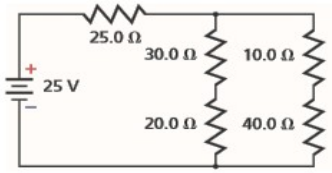
31. Consider the circuit shown below.



Which current is greatest?
A. I_A B. I_B C. I_C D. I_A and I_B

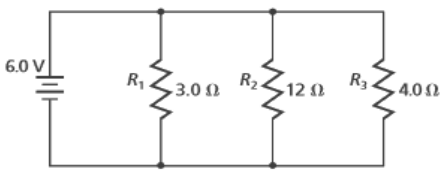
32. Which one of the following statement is **true**?
A. a fuse is connected in parallel to the circuit
B. the equivalent resistance decrease as more resistors are added to a series circuit
C. the equivalent resistance increase as more resistors are added to a parallel circuit
D. household wiring constructed in parallel

33. Consider the circuit diagram shown in the figure below.



Which resistor has the greatest current?
A. 25 Ω B. 20 Ω C. 10 Ω D. 30 Ω

34. Consider the circuit diagram shown in the figure below.



Which one of the following is **correct**?
A. the equivalent resistance of the circuit is 4 Ω B. the current in the circuit is 2 A
C. the current is in R_3 is 1.5 A D. a voltmeter placed across R_2 reads 6.0 v

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Physics Test yourself part II for Grade 8

2019/20

Grade 8
Unit 5

Electricity

1. The magnitude of the strength of the magnetic field of a straight conductor **does not** increases with

A. change in the direction of the current B. increasing of the potential difference of the source

C. by increasing the amount of current D. by decreasing the distance from the conductor

2. In the right hand rule for an electromagnet the thumb points in the direction of

A. current B. magnetic field C. e.m.f. D. force

3. What type of energy conversion takes place in an electric motor?

A. magnetic to electrical energy B. magnetic to kinetic energy

C. mechanical to electrical energy D. electrical to kinetic energy

4. Which one of the following is **not** the application of an electric motor principle?

A. electric generators B. drilling machines C. ventilators D. video players

5. In one of the following case induced emf is **not** observed?

A. when a wire moves parallel to the magnetic field lines

B. when you move a solenoid towards a bar magnet

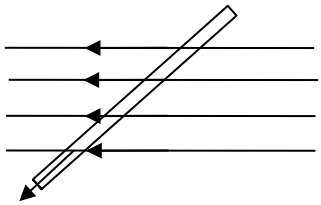
C. when a bar magnet is moving faster towards a solenoid

D. when a wire is moving upward and downward between two poles of a magnet

6. The magnetic effect of an electric current is verified by

A. Oersted B. Ohm C. Faraday D. Coulomb

7. Consider a current carrying conductor in a region of magnetic field as shown in the figure below.



What is the direction of the force on the current carrying conductor?

A. out of the page B. into the page C. to the right

D. up the page

8. The process of inducing current in a coil by the relative movement of a magnet and coil is

A. motor B. emf C. generator D. electromagnetic induction

9. A device used to convert mechanical energy to electrical energy is

A. generator B. motor C. transformer D. armature

10. Which one of the following is **not** functioning by a transformer?

A. bicycle dynamo B. cassette player C. computer D. radio

11. How can a transformer distribute electrical energy in the country?

A. by using high voltage lines carrying relatively high current

B. by using high voltage lines carrying relatively small current

C. by using low voltage lines carrying relatively small current

D. by using low voltage lines carrying relatively high current

12. What is the type of a transformer used in your mobile charger?

A. step up B. in some step up in some step down

C. step down D. a transformer is not used in a charger

13. A transformer has an output voltage of 100 v and an input voltage of 250 v. If the number of turns in the primary is 80 what will be the number of turns in the secondary?
A. 16 B. 48 C. 64 D. 32

14. Why is a high voltage used to transmit electricity?
A. to increases electrical energy loss B. to increases energy loss by heat
C. to decrease the electric energy loss D. to step up voltage and current

15. Which one is **not** a hydroelectric power station in Ethiopa?
A. Melka wakana B. Awash C. Tana – Beles D. Tekeze

16. Which one of the following is electrical safety rule?
A. touch appliances, electrical outlets or switches with wet hands
B. you can install and repair electrical wirings
C. Bare wires should be well insulated or replaced
D. Make a change in the wiring only after the mains has been put on

17. The part of an electric motor that reverses current in a segment of the coil is
A. armature B. commutator C. brushes D. battery

18. Two opposite forces acting perpendicular to an axis cause
A. back and forth motion B. rotation C. sliding motion D. no motion

19. Which one of the following statement is **correct** about a transformer?
A. it transfers heat energy to electrical energy in a circuit
B. it is functioning by using a direct current
C. the output of a transformer is alternating current
D. it has a primary coil greater in number than the secondary in step up transformer

20. A commutator is used to
A. to reduce the resistance of the armature
B. reverse the direction of current in segment of coils every half cycles
C. connect the motor with the outside circuit
D. produce magnetic field

21. The output energy in a hydroelectric power station is
A. mechanical B. chemical C. electrical D. light

22. The magnetic field strength of a current carrying conductor is independent of
A. the distance from the conductor
B. the medium in which the conductor is placed
C. the magnitude of the current through the conductor
D. the type and shape of the conductor

23. Which one of the following statements is **incorrect** about step – down transformer?
A. it decreases voltage B. it increases voltage
C. it decreases current D. it decreases the number of loops

24. Which one of the following devices gives different output energy from the others?
A. photovoltaic cell B. generator C. chemical cell D. motor

25. Which one of the following is the similarity between an electromagnet and a bar magnet?

A. magnetism is temporary

B. both has similar magnetic field line patterns

C. the polarity can be changed

D. magnetism is permanent