



Physics Supervisor
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Question (1) Complete the following :

- gas turbid the lime water, while gas helps in burning.
- By heating copper hydroxide, its color changes from into
- Sodium nitrate decomposes by heat into and, while salt decomposes into copper oxide and sulphur trioxide gas.
- When sodium reacts with water, gas evolves, while gas evolves by heating of blue copper sulphate.
- The changing of (Mg) into (Mg⁺) is considered process, while the changing of (O⁻) into (O) is considered process.
- When the hydrogen gas passes on a hot copper oxide, copper oxide changes to be and is formed.
- The reaction of salt solutions together is considered as reactions, which accompanied with the formation of
- In the following reaction, hydrogen gas is considered as agent while copper oxide is considered as agent.
$$H_2 + CuO \rightarrow H_2O + Cu$$
- The metals is arranged descendingly according to in the chemical activity series.
- $2Na + 2H_2O \rightarrow \dots + H_2 + \dots$
- $2Al + 6HCl \rightarrow \dots + \dots$
- $Na_2CO_3 + \dots \rightarrow 2NaCl + \dots + \dots$

- The potential difference between the two poles of the battery when the circuit is opened is called
- Ammeter is symbolized with in the circuit, while voltmeter is symbolized with
- The opposition that the current faces during its motion in the wires is called
- The measuring unit of the electric resistance is
- The two types of the electric resistance are and
- There are two types of the traits in the livings and
- The scientist has conducted the main principles of heredity.
- The pea plant is, so it could be self pollinated.
- The life cycle of the pea plant is
- Pea plant can be pollinated or
- The trait appears in the first generation only, while the appears in the second with a percentage 25 %.
- The color of the pea plant's flower dominates the flower color.
- The genetic factors is transmitted from one generation to another through
- Gametes are Carreyhereditary factor for each trait.
- The symbol (YY) represents the Trait while the symbol (yy) representtrait.
- is a double function gland.
- Gigantism is produced as a disorder of the hormone.
- is considered the only way for the hormone to reach its site of work.

The answer

- carbon dioxide / oxygen
- Black / red
- sodium nitrite / oxygen
- hydrogen / Sulphur trioxide
- Oxidation / reduction
- copper / water
- double substitution
- Reduction / oxidation
- The degree of their chemical activity
- 2NaOH / heat
- $2AlCl_3 / 3H_2$
- $HCl / CO_2 + H_2O$
- Electromotiv force
-
-
- electric resistance
- Ohm
- Constant / variable
- Dominant / recessive
- Mendel
- Bisexual
- Short
- self- pollination / mixed - pollination
- Dominant / recessive

24- Red / white

- Gametes
 - One
 - Dominant/recessive
 - Pencrease
 - Growth
 - Blood
- Question(2) Choose the correct answer
- metal doesn't replace the hydrogen of the diluted acids.
(Magnesium – silver – zinc – iron)
 - Which of the following substances doesn't produce black product?
(HgO – Cu(OH)₂ – CuSO₄ – CuCO₃)
 - Active metals replace the hydrogen of the water and produce.
(Metal oxide – metal hydroxide – metal carbonate – metal sulphate)
 - In the oxidation reduction reactions, the number of the loosed electrons are the gained electrons.
(More than – less than – equal to)
 - When potassium reacts with diluted hydrochloric acid, hydrogen gas evolves and salt is formed.
(potassium nitrate – potassium sulphate – potassium chloride – potassium hydroxide)
 - Oxidation and reduction are processes.
(concurrent – separated – no correct answer)
 - Mass of the nucleus is concentrated in the
(energy levels – nucleus – electrons)
 - The source which the atom gets its tremendous energy is known as
(Nuclear energy – electric energy – heat energy)
 - There is force between the components of the nucleus.
(repulsion – attraction – both are correct)
 - The French scientist is considered the discover of the radioactive phenomenon.
(Mendel – Ohm – Bequrel)
 - The radiation that comes out from the Uranium element is and has the ability to penetrate solids.
(visible – unseen – No correct answer)
 - come (s) out from the radioactive element.
(rays only – particles only – both are correct)
 - The natural sources of the radioactive pollution is represented by
(Cosmic radiation – nuclear reactors – no correct answer)
 - Chernobyl accident produces the isotopes of radioactive element.
(Uranium – cesium – polonium)
 - Bone marrow can be destroyed as a result of exposure to amount of radiation for periods.
(large and short – long and small – both are correct)
 - Physical effects take place as a result of the exposure to amount of radiation.
(Large – small – both are correct)
 - The exposure to the small amount of radiation resulted in a cellular effects as
(Spleen damaging – changing in the sex chromosomes – changing in the hemoglobin structure)
 - It is necessary not to be exposed to a radiation more than Sievert per year for the public human bodymilli sievert
(1 – 20 – 10)
 - The area chosen for the storing of the radioactive wastes should be
(Unstable – away from the volcanoes – both are correct)
 - Hormones are secreted from special organs called
(Duct glands – ductless gland – both are correct)
 - The gland that locates under the brain is called
(Thyroid – adrenal – pituitary)
 - Calcitonin hormone is secreted from gland.
(Thyroid – pancreas – testes)
 - The hormone is secreted from the ovaries.
(Estrogen – testosterone – insulin)
 - Adrenaline is a hormone that is secreted in the case of
(Increase of the sugar percentage – emergencies – growth)
 - The hormone is secreted from the testes.
(Adrenaline - testosterone- Estrogen)

- The answer
- silver

2-HgO

- Metal hydroxide
- equal to
- Potassium chloride
- Concurrent
- Nucleus
- Nuclear energy
- both are correct
- Bequrel
- unseen
- both are correct
- Cosmic radiation
- Cesium
- large and short
- small
- changing in the hemoglobin structure
- 1milli sievert
- away from the volcanoes
- ductless gland
- pituitary
- Thyroid
- Estrogen
- emergencies
- testosterone

Question(3)put (√) or (×)

- Chemical energy can be changed into electric energy through the electric generators. ()
- The electric current that resulted from the electrochemical cells is known as alternating current. ()
- In dynamo, the mechanical energy is converted into electric energy. ()
- From the advantages of the A.C is its ability to be converted into D.C ()
- A.C is resulted from waterfalls. ()
- Electrons flow in the D.C in two different directions. ()
- D.C is used in the lightning of the streets and electroplating. ()
- The electric cells are connected in the circuit is series only. ()
- The E.M.F of a battery increases when the cells are connected in series. ()
- The negative pole is connected with another negative in series connection. ()
- The E.M.F of a battery which their cells are connected in series is calculated from the relation (e.m.f of one cell × N). ()

The answer

- (X)
- (X)
- (√)
- (√)
- (X)
- (X)
- (X)
- (X)
- (√)
- (X)
- (√)

Question(4): Give reason for:

- Endocrine glands are called ductless.
- Pituitary gland is called "the master gland".
- Pancreas is a double function gland.
- The recessive trait is always pure.
- Mendel let the pea plant self-pollinate for several generations .
- Uranium is one of the radioactive elements.
- Radiation has genetic effects .
- Alternating current is preferable in using than direct current
- The rheostat is used in electric circuit .
- Some celled connected in the electric circuit in series .

The answer:

- Because they secrete their hormones directly in the blood without passing through ducts .
- Because it secretes hormones regulates the activities of most other endocrine glands.
- Because the pancreas secretes the insulin hormone and glucagon hormone and the function of each hormone contradicts the function of the other hormone .
- Because it doesn't appear unless the two genes of recessive trait aggregate .
- To be sure the purity of the trait.
- Because its nucleus contain a number of neutrons more than the number required for its stability .

- because radiation causes change in the six chromosomes composition for living organisms which produce abnormal birth.
- because it can be transferred for along distance through wires and can be change into direct current .
- To control the electric current intensity and the potential difference in the different parts of the circuit.
- To obtain a battery, the e.m.f. of it is high

Question(5)Problems

1-An electric appliance works with a potential difference 220 volts and electric resistance 20 Ohm. Calculate the current intensity and the amount of electric charges through 5 seconds.

The answer:

$$I = \frac{V}{R} = \frac{220}{20} = 11 \text{ amper}$$

$$q = I \times \text{time} = 11 \times 5 = 55 \text{ column}$$

2- Calculate the amount of charges that flow through a wire if the electric intensity equals 6 amperes through 3 seconds.

The answer

$$q = I \times \text{time} = 6 \times 3 = 18 \text{ column}$$

3- Calculate the work done to transfer electric charge is 50 coulomb if the p.d between two terminals of the wire = 12 volts.

The answer

$$W = V \times q = 12 \times 50 = 600 \text{ joule}$$

4- Calculate the time of transferring of electric charges = 10 coulombs in an electric circuit if the current intensity = 5 amperes.

The answer:

$$t = \frac{q}{I} = \frac{10}{5} = 2 \text{ second}$$

Question: Show by drawing only:

1) The connection of 3 cells each of 1.5 volts to get an e.m.f with :

- 1.5 volt
- 3 volt
- 4.5 volt

The answer

To get battery 1.5 volt we connect the cells in parallel way



The e.m.f of the battery = 1.5 volt



To get battery 4.5 volt we connect the cells in series

The e.m.f = 1.5 x 3 = 4.5 volt

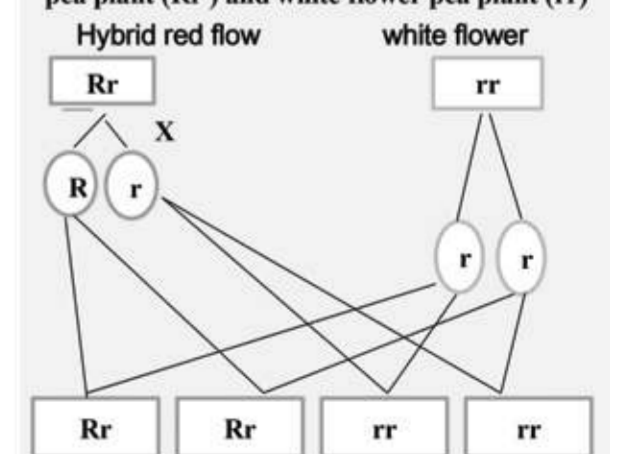


To get battery 3 volt we connect 2 cells in series

And one in parallel

The e.m.f = 1.5 x 2 = 3 volt

2- Using symbols to express the results of mating between Hybrid red flower pea plant (Rr) and white flower pea plant (rr)



50% red flower : 50% white flower
1 : 1