



ALADWAA

**Gem
Science**

نماذج إجابات

الصف الثالث الإعدادي

الفصل الدراسي الثاني

2021



1 A. 1. Neutralization reaction

2. voltmeter-volt

3. dominant

4. pancreas gland

5. sulphur trioxide

B. 1. Red mercuric oxide decomposes by heat into mercury (silvery precipitate) and oxygen gas evolves.

2. The body stops growing, so the person becomes a dwarf.

C. 1. It is used to control the current intensity and potential difference in the electric circuit.

2. To treat and diagnose diseases like cancer.

2 A. 1. the speed of chemical reaction

2. reducing agent

3. hormones

4. pure individual

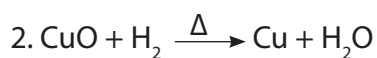
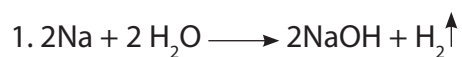
B. The current intensity = $\frac{Q}{t} = \frac{300}{30} = 10$ amperes.

C. 1. It is the flow of electric negative charges through a conductor.

2. They are the traits that are not transmitted from one generation to another.

3 A. 1. a 2. d 3. b

B.



4 A. 1. testosterone

2. oxygen

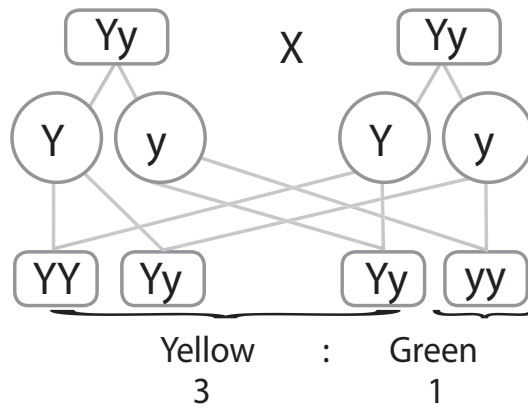
- B.** 1. Because radiation causes changes in the sex chromosomes composition for living organisms.
 2. Because iodine salt is rich in iodine element that enters in the thyroxin hormone's structure.

C.

P

G

F₁



1 A. 1. Electric potential of a conductor.

2. Acquired traits.

3. Genes

4. Physical effects

B. 1. Silver nitrate solution reacts with sodium chloride solution to give sodium nitrate and a white precipitate of silver chloride.

2. This leads to decreasing in the secretion of thyroxin hormone which causes the human to suffer from simple goiter.

C. 1. $\text{NaOH} + \text{HCl} \longrightarrow \text{NaCl} + \text{H}_2\text{O}$

2. Double substitution (neutralization reaction).

2 A. 1. (✓). 2. (✓). 3. (X). 4. (X).

B.

P.O.C	Dominant trait	Recessive trait
Definition	The trait that appears in all individuals of the first generation.	The trait that disappears completely in the individuals of the first generation.
State	Pure or hybrid (impure)	Always pure
Percentage of appearance	100% in the first generation 75% in the second generation	0% in the first generation 25% in the second generation
Example	Yellow seed color in a pea plant	Green seed color in a pea plant

C. The potential difference = $R \times I = R \times \left(\frac{Q}{t}\right) = 30 \times \frac{5400}{5 \times 60} = 540$ volts

3 A. 1. growth

2. voltmeter

3. seven

B. 1. To control the current intensity and the potential difference in the different parts of the circuit.

2. Because it secretes hormones that regulate the activities of most of other endocrine glands.

C. 1. To be used as a catalyst to speed up the rate of reaction.

2. 5 grams.

4 A. 1. a

2. a

B. 1. It helps in the treatment of harmful gases emitted from the car engine.

2. It controls the level of calcium in blood.

C. 1. Figure (1): series connection

Figure (2): parallel connection

2. Total e.m.f. in figure (1) = 6 volts.

Total e.m.f. in figure (2) = 1.5 volts.

1 A. 1. oxygen gas

2. ampere

3. enzyme - specific protein

4. gigantism

B. Total e.m.f. = 4.5 volts

C. 1. They are the reactions in which double substitution (exchange) occurs between the ions of two compounds to give two others new compounds.

2. It is the value of the work done to transfer a quantity of charges of one coulomb between the two ends of this conductor.

2 A. 1. d 2. b 3. b 4. c 5. b

B.



C. 1. It is used for measuring the electric resistance.

2. It promotes the growth of endometrium.

3 A. 1. To prevent cross pollination with another flower.

2. Because its nucleus contains a number of neutrons more than the number required for its stability.

3. Because magnesium replaces copper as it comes before copper in the chemical activity series and copper precipitates as a reddish-brown ppt.

B. 1. metal oxide 2. directly

- C.** 1. No electric current will pass through them, because there is no potential difference between them.
2. The level of glucose sugar in blood increases or human will suffer from diabetes disease.

4 A. 1. chemical reaction.

2. oxidizing agent.

3. electric current.

B. Quantity of electricity = $\frac{V}{R} \times t = \frac{110}{1100} \times 120 = 12$ coulombs

C. • Simple goiter: The decrease in secretion of thyroxin hormone due to the lack of iodine from food as it enters in the hormone's structure.

• Exophthalmic goiter: The increase in the secretion of thyroxin hormone in large amount.

1 A. 1. ampere – volt

2. thyroxin – thyroid



B. 1. Because the concentration of oxygen inside the jar is more than that in air, so the number of collisions between molecules increases and consequently the speed of the reaction increases.

3. Due to the increase in the secretion of the growth hormone in childhood.

C. • The potential difference (V) = $\frac{W}{Q} = \frac{300}{100} = 3$ volts.

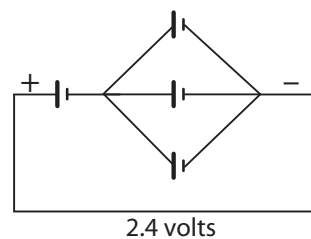
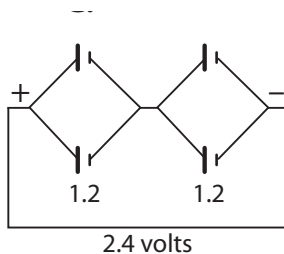
• The resistance = $\frac{V}{I} = \frac{3}{2} = 1.5$ ohm

2 A. 1. b 2. d 3. a 4. b

B.

Alternating current	Direct current
<ul style="list-style-type: none"> - Variable in intensity and direction. - Can be converted into a direct current. 	<ul style="list-style-type: none"> - Constant in intensity and direction. - Cannot be converted into an alternating current.

C.



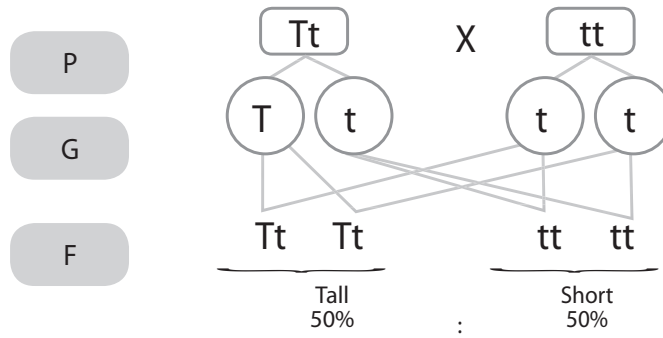
3 A. 1. recessive trait

2. electric resistance

3. natural radioactivity

4. enzyme

B.



4 A. 1. negative.

2. increasing surface area.

B. 1. The resistance increases and the current intensity decreases.

2. White sodium nitrate decomposes by heat into sodium nitrite (yellowish white) and oxygen gas evolves.

3. The level of glucose sugar in blood decreases.

1 A. 1. ammeter - voltmeter

2. ions - molecules

3. DNA - protein

4. thyroxin - thyroid

5. Henri Becquerel - uranium

B. 1. Because it's an acquired trait that can't be inherited from one generation to another.

2. To prevent cross pollination with another flower.

C. The work done = potential difference x quantity of electricity = $100 \times 25 = 2500$ joules

2 A. 1. current intensity

2. oxidase enzyme

3. chemical reaction

4. chemical activity series

B. 1. • Direct current: It is used in electroplating processes and in operating some electric appliances.

• Alternating current: It is used in lighting houses and in operating electric appliances.

2. • Dwarfism: It is caused due to the decrease in the secretion of growth hormone in childhood.

• Gigantism: It is caused due to the increase in the secretion of growth hormone in childhood.

C.



2. (1) Mercuric oxide

(2) Oxygen gas

(3) Mercury

3 A. 1. d 2. d 3. c 4. b

B. 1. The produced plant will have yellow seeds and green seeds at ratio 3: 1.

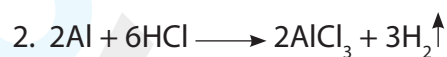
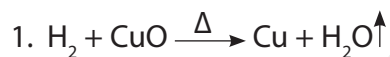
2. Electric current intensity decreases to half.

3. Pancreas responds by secreting glucagon hormone to raise the percentage of glucose sugar in blood.

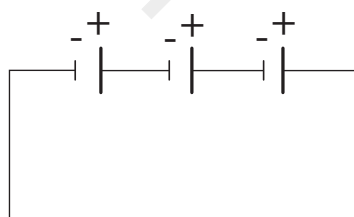
4 A. 1. Chemical 2. 25%

3. Estrogen

B.

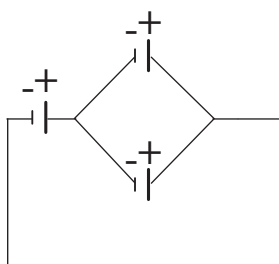


C. 1.



4.5 Volts

2.



3 Volts