Exercise (1)

General exercises on the Second term

Answer the following questions :

1) Choose the correct answer for each statement of the following :

1- On heating copper hydroxide, we obtain .....

a- copper carbonate and water

b- copper oxide and water vapour

c- copper and hydrogen

d- copper oxide and hydrogen

2- Substitution reactions take place on replacing .....

a- less active element with more active one.

b- less active compound with more active one.

c- more active element with less active one.

d- more active compound with less active one.

3- The intensity of electric current passing through a circuit can be measured by using ..... apparatus .

a- pyrometer

b- barometer

c- voltmeter

d- ammeter

4- For measuring the potential difference between two terminals of a conductor, we use ..... apparatus .

a- pyrometer

b- barometer

c- voltmeter

d- ammeter

5- The value of the resistance of an electric conductor in an electric circuit is changed on changing .....

a- dimensions of the conductor.

b- electric current intensity passing through it.

c- potential difference between its terminals.

d- other electric circuit components.

Exercise (1)

General exercises on the Second term

2) Give reasons for each of the following:

1- Iron fillings with a certain mass reacts faster with acids than a piece iron has the same mass.

2- The steel scourer used for cleaning aluminium burns in a cylinder full of oxygen faster than burning in air.

3 - Mendel covered the stigmas of pea plants on studying the colour seed trait.

4- A red precipitate is formed on adding magnesium to copper sulphate solution.

3) Compare between each pair of the following:

1- Oxidation and oxidizing agents (in terms of their meaning)

2- The two testes and ovaries (in concern of their hormones and functions)

3- The dominant and recessive traits (in according to their genes)

4) Complete the following statements:

1- On passing hydrogen gas over hot copper oxide, copper oxide is converted into .....

2- On adding silver nitrate solution to sodium chloride solution, a white precipitate of ..... is formed

3- Chemically ,the chromosome consists of the ..... nucleic acid bonded with protein.

5) Chemical reactions are classified into different types, write the type of each reaction of the following between brackets.

1- $H_2 + CuO \rightarrow Cu + H_2O$ (.....)

2- $KOH + HCl \rightarrow KCl + H_2O$ (.....)

3- $2\ Na + 2\ HCl \rightarrow 2\ NaCl + H_2\uparrow$ (.....)

6) Define each of the following :

1- Electric current intensity

2- Ammeter

3- Electric potential

4- Volt

Exercise (1)

General exercises on the Second term

5- Electric resistance

6- Ohm

7- Acquired traits

8- Radioactivy

9- Mutation

10- Hormone

7) Mention each of the following :

1- Two precautions needed on dealing with radioactive wastes.

2- Three ways of protection from radioactive pollution.

3- Mendel's first law (law of segregation)

4- The disease results due to insulin hormone deficiency

5- Radioactive phenomenon.

6- Ohm's law.

8) If the potential difference between the two terminals of a conductor is 6volts, and the electric current of intensity 0.5 ampere is passed through it. Calculate the intensity of the electric current passing through this conductor if it is connected with a voltage source of 12 volts.

9) Calculate the quantity of electricity that pass through a conductor of resistance 1000 ohms for 30 minutes, given the potential difference between its two terminals is 220 Volts.

10) You have four electric cells each of emf 1.2 Volt . Show by drawing the method of connecting them to obtain each of the following:

1- A battery of emf 1.2 Volt.

2- A battery of emf 4.8 Volt.

3- A battery of emf 2.4 Volt.

Exercise (1)

General exercises on the Second term

11) Choose from (B) and (C) what suits with (A).

A	B	C
1 - Electric current intensity	- Ohm - Coulomb	- Voltmeter - Ammeter
2 - Potential difference	- Volt - Ampere	- Wattmeter - Ohmmeter
3 - Resistance	- Joule	

12) " Nuclear energy is used in peace purposes"

Mention their most important uses in each of the following fields.

1- Medicine 2- Agriculture

3- Industry 4- Generating electricity

13) What are the reasons of the spontaneous mutation ?

14) Draw a diagram representing each of the following:

1- An electric circuit used to verify Ohm's law

2- Alternating current.

15) Compare between the industrial uses of bases and salts.

16) Write a balanced chemical equation that represents each of the following:

1- Replacing the hydrogen of an acid by a metal

2- Replacing a metal by another metal in one of its salt solutions

3- Double substitution reaction

4- Neutralization process.

Exercise (1)

General exercises on the Second term

17) Complete the following chemical equations:

1- ..... $\xrightarrow{\Delta}$ $2Hg + O_2$

2- $2NaNO_3$ $\xrightarrow{\Delta}$ ..... + O_2

3- $NaOH$ + ... → $NaCl + H_2O$

18) Write scientific explanation for each of the following :

1- Ionic compounds reactions are faster than that of covalent ones.

2- The rate of chemical reaction is increased by increasing the temperature.

3- Dwarfism phenomena in humans

19) Compare between direct electric current and alternating electric current in terms of:

1- Their definition 2- Their uses

20) Mention one application for each of the following:

1- Scientific uses of nuclear energy in medicine and agriculture.

2- The use of chemical bases in industry.

21) Complete the following table:

Substance (acid - base - salt)	Economic importance of common acids, bases and salts
.....	Digestion of proteins
.....	Manufacture of glass and cement
Magnesium hydroxide	.....
.....	Manufacture of explosives and fertilizers
Silver nitrate	.....

Exercise (2)

General exercises on the Second term

- Answer the following questions:

1) Complete the following sentences:

1- Ammonium nitrate is decomposed by heat into ..... and .....

2- $CuCO_3 \xrightarrow{\Delta}$ ..... + ...

3- $Cu(OH)_2 \xrightarrow{\Delta}$ ..... + ...

4- $2Al + ... \longrightarrow AlCl_3 + ...$

5- Mixtures are classified according to homogeneity into ..... , ...

6- Nitric acid is used in ..... industry while sulphuric acid is used in ..... industry.

7- Deficiency of ..... hormone causes dwarfism.

2) Write (√) in front of the correct statement, and (X) in front of the wrong ones :

1- Coulomb is the measuring unit of potential difference.

2- The acid is a solid substance.

3- Exophthalmia goiter is resulted due to thyroxin hormone defeciency.

4- The mutation always arises naturally.

5- In dry cell, magnetic energy is changed to electric energy.

6- Oxidation and reduction reactions take place separately.

7- Oxidation and reduction are two correlative processes and take place at the same time.

Exercise (2)

General exercises on the Second term

3) Define each of the following :

1- Substitution reactions

2- Oxidation

3- Reduction

4- Oxidizing agent

5- Reducing agent

6- Rate of reaction

7- Reactants

8- Products

9- Catalysts

10- Electric current intensity

11- Coulomb

12- Electrical potential

13- Resistance

14- Ohm's law

15- Radioactivity

16- Mendel's first law

17- Mendel's second law

18- Mutation

19- Gametes

20- Gene

21- Endocrine glands

Exercise (2)

General exercises on the Second term

4) What would happen in each of the following cases .....?

1- Pollination of peas flowers of hybrid yellow seeds with each other .

2- Exposure of human body to high radioactive doses for a short period of time.

3- Heating of red mercuric oxide.

4- Heating of copper sulphate.

5) Give reasons for each of the following :

1- Gold does not react with acids.

2- Catalyst is used in some chemical reactions.

3- Uranium is one of radioactive elements.

4- Mendel chose the pea plant to conduct his experiments.

5- Diabetes disease is treated with insulin hormone.

6- Pituitary gland is known as "master gland".

Exercise (3)

General exercises on the Second term

Answer the following questions:

1) Complete the following:

1- The process of losing an electron or more is called .....

2- In ..... reactions, the compound is decomposed into its initial elements by heating.

3- Substance that gives oxygen or removes hydrogen is called .....

4- In the beginning of the reaction, the concentration of the reactants is ..... %

5- Covalent compounds are ..... in their reactions.

6- An excess of the solute cannot be dissolved in ..... solution.

7- The rate of chemical reaction is ..... by increaseing the temperature.

8- The measuring unit of the quantity of electricity is .....

9- The measuring unit of the resistance of a conductor is .....

10- ..... apparatus is used to measure the resistance in the circuit.

11- Chromosome is chemically composed of a nucleic acid called ..... which is combined with .....

12- From types of mutation are ..... and .....

13- ..... hormone is secreted, when the percent of glucose sugar in the blood increased.

14- The speed of chemical reaction depends on ..... , ..., ... and .....

Exercise (3)

General exercises on the Second term

15- Increasing of growth hormone secretion in the childhood stage causes .....

16- Deficiency of insulin hormone secretion causes .....

17- Dry cells produce ..... current, while electric generators produce .....current.

18- Electric current is generated in dynamo as a result of change ..... energy into ..... energy.

19- Copper hydroxide is decomposed by heat to ..... and .....

20- $CuCO_3 \xrightarrow{\Delta}$ ..... + ...

21- $2Al + 6HCl \longrightarrow 2AlCl_3 +$ .....

22- Nitric acid is used in ..... industry while sulphuric acid is used in ..... industry.

23- The deficiency of ..... hormone secretion during ..... stage causes the dwarfism.

24- From the factors that affect the rate of chemical reaction are ..... , ... and .....

25- Chemical reaction is ..... in the reactant molecules and ..... in the product molecules.

26- .....acid is produced in human muscles during physical exercises.

27- Nuclear energy is used in medicine in ..... and .....

Exercise (3)

General exercises on the Second term

2) Choose the correct answer for each of the following:

1- In thermal decomposition reactions, the compound is decomposed into .....

a- its simple components
b- its primary elements
c- other compounds
d- all the previous

2- On heating red mercuric oxide, it decomposes into .....

a- oxygen
b- mercury
c- oxygen and mercury
d- no correct answer

3- Heating of metal hydroxide produces .....

a- metal oxide only
b- metal oxide and CO_2
c- CO_2 gas only
d- no correct answer

4- Copper sulphate is decomposed by heat into .....

a- black copper oxide only
b- sulphur trioxide gas only
c- sulphur dioxide gas and black copper oxide.
d- black copper oxide and sulphur trioxide gas.

5- Some metal nitrates are decomposed by heat into .....

a- metal nitrite and oxygen gas
b- metal nitrate and oxygen gas
c- nitrogen oxide and oxygen gas
d- no correct answer

6- Blue copper hydroxide is decomposed by heat into .....

a- copper oxide and oxygen
b- copper oxide and water vapor
c- copper and water vapor
d- (a and c) are correct

7- The descending arrangement of metallic elements according to their chemical reactivity is called .....

a- Chemical activity series
b- (+ve) ions
c- (-ve) ions
d- free atoms

Exercise (3)

General exercises on the Second term

8- Active metals replace hydrogen of water and produce…….. and hydrogen gas is evolved.

a- metal hydroxide b- metal oxide

c- metal carbonate d- metal sulphate

9- Active metals replace hydrogen of water producing metal hydroxide and …… gas is evolved.

a- carbon dioxide b- hydrogen

c- nitrogen d- oxygen

10- Metals replace hydrogen of the acid and ……. gas is evolved.

a- nitrogen oxide b- carbon dioxide

c- hydrogen d- oxygen

11- Zinc reacts with dilute hydrochloric acid and ……. salt is formed.

a- zinc chloride b- zinc sulphate

c- zinc nitrate d- no correct answer

12- Potassium reacts with dilute hydrochloric acid forming ……salt.

a- potassium nitrate b- potassium sulphate

c- potassium chloride d- no correct answer

13- On adding copper turning to dilute hydrochloric acid …… is produced.

a- copper hydroxide b- copper carbonate

c- copper chloride d- no reaction

14- Some metals can replace another one in the solution of these metals which ……

a- follow it in chemical activity series

b- Precede it in chemical activity series

c- (a and b) are correct d- no correct answer

Exercise (3)

General exercises on the Second term

15- When magnesium replaces copper in its salt solution, a ..... precipitate is formed.

a- black b- red

c- reddish brown d- no correct answer

16- Double substitution reactions are classified into .....

a- acid and alkali reaction b- reaction of an acid with a salt

c- reaction of salt with another salt d- all the previous.

17- The acid reacts with an alkali producing .....

a- salt and water b- salt and hydrogen gas

c- salt and oxygen gas d- no correct answer

18- When potassium hydroxide reacts with hydrochloric acid ..... are produced.

a- potassium chloride and water b- potassium sulphate and water

c- potassium oxide and water d- all the previous

19- Hydrochloric acid reacts with sodium carbonate powder forming .....

a- sodium chloride and oxygen gas b- sodium chloride and CO_2 gas

c- sodium oxide and water d- all the previous

20- Clear lime water turbids on passing ..... gas through it.

a- nitrogen dioxide b- sulphur dioxide

c- carbon dioxide d- (a and b) are correct

21- $Cu(OH)_2 \xrightarrow{\Delta}$ ..... + ...

a- $CuO + H_2O$ b- $CuO + H_2$

c- $Cu + H_2O$ d- no correct answer

Exercise (3)

General exercises on the Second term

22- $2NaNO_3 \xrightarrow{\Delta}$ ..... + ...

a- $NaNO_3$ b- $2NaNO_2 + O_2$

c- $NO_2 + O_2$ d- all the previous

23- ..... $\xrightarrow{\Delta}$ $CuO + CO_2$

a- $CuCO_3$ b- $CuSO_2$

c- $CuSO_4$ d- all the previous

24- $2Na + 2H_2O \longrightarrow 2NaOH +$ .....$\uparrow$

a- N_2 b- Cl_2

c- H_2 d- O_2

25- ..... $+ 2HCl \rightarrow ZnCl_2 + H_2 \uparrow$

a- Zn b- Mg

c- N_2 d- O_2

26- When sodium chloride solution reacts with silver nitrate solution a ..... precipitate is formed.

a- red b- white

c- reddish brown d- blue

27- On passing hydrogen gas on hot copper oxide, a red precipitate of ..... is formed.

a- copper b- copper oxide

c- (a,b) are correct d- all the previous

28- In the reaction of hydrogen with black copper oxide, ... process takes place to copper oxide.

a- oxidation b- reduction

c- oxidation and reduction d- no correct answer

Exercise (3)

General exercises on the Second term

29- The oxidizing agent is the substance that .....

a- gives oxygen
b- takes hydrogen
c- (a and b) are correct
d- no correct answer

30- The reducing agent is the substance that .....

a- gives oxygen
b- takes oxygen
c- gives hydrogen
d- (b and c) are correct

31- Reduction is a chemical process in which a decrease in the percentage of ..... gas takes place.

a- hydrogen
b- oxygen
c- chlorine
d- carbon dioxide

32- Oxidation is a chemical process in which an increase in the percentage of ..... gas.

a- helium
b- hydrogen
c- oxygen
d- fluorine

33- When sodium atom loses an electron from its outermost energy level, it becomes .....

a- oxidized
b- reducing agent
c- reduced
d- (a and b) are correct

34- From the factors that affect the rate of chemical reaction are .....

a- concentration of the reactant
b- nature of the reactant
c- temperature
d- all the previous

35- Iron fillings reacts with dilute hydrochloric acid faster than a piece of iron has the same mass due to the .....

a- increase in concentration
b- presence of a catalyst
c- increase in surface area
d- no correct answer

Exercise (3)

General exercises on the Second term

36- The rate of chemical reaction is increased by rising temperature due to .....

a- increase the number of collisions between reactants.

b- the presence of covalent bonds.

c- increase of the surface area. d- no correct answer.

37- Catalyst increases the rate of chemical reaction, because it .....

a- decreases the energy needed to start the reaction.

b- combines with reactants then separates away to give the products .

c- does not chemically change.

d- all the previous.

38- At the beginning of the reaction, the percentage of the reactants concentration equals .....

a- 100% b- 0%

c- 50% d- no correct answer

39- The mixture in which solute molecules are distributed regularly through the solvent is called .....

a- homogenous mixture b- heterogeneous mixture

c- suspension d- no correct answer

40- The solution that an additional amount of the solute can be dissolve in it at certain temperature is called ..... solution.

a- unsaturated b- saturated

c- suspension d- super saturated

41- The solution that no more solute can be dissolve in it without change in its temperature is known as ..... solution.

a- saturated b- unsaturated

c- super saturated d- colloidal

Exercise (3)

General exercises on the Second term

42- The solution that allows more amount of solute to dissolve in it by increasing temperature is called ..... solution.

a- saturated b- unsaturated

c- super saturated d- suspension

43- In manufacture of car batteries, ... acid is used.

a- phosphoric b- hydrochloric

c- sulphuric d- citric

44- The unit that is used in measuring electric resistance is .....

a- ohm b- ampere

c- volt d- coulomb

45- Electromotive force is measured in ..... unit.

a- ohm b- ampere

c- volt d- joule

46- The **unit** that is used in measuring electric current intensity is .....

a- coulomb b- ampere

c- volt d- joule

Exercise (3)

General exercises on the Second term

47- The apparatus that is used in measuring electric current intensity is ……..

a- ammeter
b- voltmeter
c- ohmmeter
d- no correct answer

48- The apparatus that is used in measuring potential difference is ……..

a- voltmeter
b- ammeter
c- ohmmeter
d- rheostat

49- The apparatus that is used in measuring electric resistance is …….

a- rheostat
b- ammeter
c- voltmeter
d- ohmmeter

50- The apparatus used to control the value of electric resistance in the circuit is ……..

a- ammeter
b- voltmeter
c- ohmmeter
d- rheostat

51- The mathematical relation of Ohm's law is .....

a- $R = \frac{V}{I}$
b- $I = \frac{R}{V}$
c- $R = I \times V$
d- no correct answer

52- The unit that is used to measure the quantity of electricity passing through a circuit is …….

a- volt
b- ampere
c- ohm
d- coulomb

53- To generate an alternating electric current, we use the ……..

a- rheostat
b- dynamo
c- ammeter
d- ohmmeter

Exercise (3)

General exercises on the Second term

54- To generate a direct electric current, we use the .....

a- dry cell b- dynamo

c- ammeter d- ohmmeter

55- Alternating current is characterized by .....

a- constant intensity b- variable direction

c- variable intensity and direction d- variable intensity

56- In dry cell, ... energy is converted to electrical energy.

a- magnetic b- kinetic

c- chemical d- light

57- In dynamo, ... energy is converted to electric energy.

a- magnetic b- kinetic

c- chemical d- light

58- Four similar electric cells, are connected in series ,each one has e.m.f of 1.5 volt so the total e.m.f equals ..... volt.

a- 3 b- 6

c- 1.5 d- 12

59- The scientist who discovered radioactivity phenomena was .....

a- Ohm b- Becquerel

c- Ampere d- Mendel

60- The measuring unit of the absorbed radiation is .....

a- Curie b- Rem

c- Roentgen d- Ampere

Exercise (3)

General exercises on the Second term

61- The parts of DNA in the cell nucleus:

a- gene
b- gamete
c- cytoplasm
d- nor correct answer

62- It is chemically composed of the nucleic acid DNA combined with protein :

a- cytoplasm
b- chromosome
c- gene
d- no correct answer

63- The two factors of a hereditary trait are similar in the ..... individual.

a- pure
b- hybrid
c- recessive
d- (a) and (c)

64- The hormone which stimulates body organs to respond for emergencies is .....

a- insulin
b- glucagon
c- estrogen
d- adrenalin

65- The hormone responsible for the appearance of the female secondary sex characters is .....

a- estrogen
b- testosterone
c- parathormone
d- insulin

66- The hormone responsible for the appearance of the male secondary sex characters is .....

a- estrogen
b- testosterone
c- insulin
d- thyroxin

Exercise (3)

General exercises on the Second term

67- The hormone which its deficiency causes the enlargement of the thyroid gland is .....

a- estrogen

b- insulin

c- thyroxin

d- glucagon

68- The hormone which stimulates the storage of glucose sugar in liver is the .....

a- insulin

b- estrogen

c- parathormone

d- thyroxin

69- The hormone which regulates the level of calcium in blood is the .....

a- calcitonin

b- thyroxin

c- adrenalin

d- progesterone

Exercise (3)

General exercises on the Second term

3) Mention one function only for each of the following :

1- Enzymes.

2- Refrigerator

3- Sulphuric acid.

4- Calcium carbonate.

5- Calcium oxide.

6- Catalyst (in chemical reaction).

7- Sodium Chloride.

8- Hydrochloric acid.

9- Silver nitrate.

10- Potassium nitrate.

11- Rheostat.

12- Radioactive elements in medicine.

13- Sodium and potassium salts in human body.

14- Voltmeter .

15- Adrenalin hormone in the human body.

Exercise (3)

General exercises on the Second term

4) Write a scientific term for each of the following :

1- A substance that loses one electron or more during a chemical reaction.

2- Process of breaking down the bonds between the molecules of reactants and formation of new bonds between the molecules of the products.

3- Reaction of an acid and a base to give salt and water.

4- Reaction involves replacing a metal by another one in its salt solution.

5- Change in the concentration of the reactants and products per unit time.

6- A substance that accelerates the rate of reaction and not participate in it.

7- Electric current intensity is directly proportional to potential difference between two terminals of a conductor at constant temperature.

8- An apparatus used to measure electromotive force.

9- The state of a conductor that determines the transfer of electricity from or to it.

10- The resistance that faces the electric current during its passage in a conductor.

11- The unit that is used to measure the absorbed radiation.

12- Spontaneous conversion of the atoms of some elements existing in nature, trying to reach a more stable structure.

13- Flow the electric charges through a conductor.

14- Through which , the hereditary traits are transmitted from parents to offspring.

15- When two homozygous individuals differ in one pair of contrasting characters are crossed, only the dominant trait appears in the first generation, and the two traits appear in the second generation by the ratio 3:1.

Exercise (3)

General exercises on the Second term

16- A structure consists of pentose sugar, a phosphate group and a nitrogenous base.

17- The changing of chemical composition of one gene or more.

18- Chemical substance regulates most human activities and functions.

19- Organs secrete hormones directly into blood stream.

5) Show by balanced chemical equations each of the following :

A- Effect of heat on:

1- Red mercuric oxide

2- Sodium nitrate

3- Copper hydroxide

B- Addition of water to:

1- Sodium metal

C- Effect of adding hydrochloric acid to:

1- Zinc metal

2- Sodium hydroxide

6) Rewrite the following statements after correcting the underlined words:

1- Rate of chemical reaction is increased by **decreasing** temperature.

2- **Nitric acid** is used in batteries industry.

3- Most of metals carbonate are decomposed into **metal** and carbon dioxide.

4- Electric current intensity is **inversely** proportional with potential difference at constant temperature.

5- The resistance of a conductor that 1 ampere is passed through it when the potential difference between its terminal is 1 volt equals **10 ohm**.

6- In the electric cell, **magnetic** energy is converted into electrical energy.

7- When two individuals differ in two or more pairs of contrasting characters are crossed, each pair of characters is inherited **together,** and appear in second generation by the ratio 3:1.

Exercise (3)

General exercises on the Second term

8- The **acquired** traits are transmitted from a generation to another.

9- **Insulin** hormone is responsible for appearance of the human secondary male sex characters.

10- **Thyroid** gland secretes a hormone regulates the growth of human sex organs.

11- The **highfeed** is the mechanism by which hormones do their functions in human body.

12- **Iron element** participates in the composition of thyroxin hormone.

7) Compare between:

1- Ionic and covalent compounds (in the rate of reaction as a point of view).

2- Homogeneous mixture and heterogeneous one.

3- Saturated and unsaturated solutions.

4- Ammeter and Voltmeter (in terms of their uses and measuring units).

5- Alternating and direct current (in source and uses).

6- The mutation that occurs in reproductive cells and that occurs in somatic cells (according to their transmission from a generation to another).

7- Connecting electric cells in series and in parallel (in terms of the produced e.m.f)

8- The spontaneous mutation and induced one (in terms of their occurrence and controlling them).

Exercise (3)

General exercises on the Second term

8) What would happen when .....?

1- Heating of sodium nitrate.

2- Putting a piece of sodium in water.

3- Putting a piece of magnesium in copper sulphate solution.

4- Exposing a man for a large dose of atomic radiation for a short period of time.

5- Chemical change of genes.

6- Heating of red mercuric oxide.

7- The deficiency of growth hormone secretion in childhood.

8- The deficiency of thyroxin hormone secretion.

9- Heating of blue copper hydroxide.

9) Give reasons for each of the following:

1- Sodium replaces hydrogen of the acids

2- Reactions of iron fillings with dilute hydrochloric acid is faster than its reaction with a piece of iron.

3- Rate of chemical reaction is increased by increasing the reactants concentration.

4- Radiation has genetic effects.

5- Alternating current is preferred than the direct one .

6- Rheostat is used in some electric circuits.

7- Mendel chose pea plant to conduct his experiments.

8- Copper does not react with dilute hydrochloric acid.

9- Pituitary gland is called "the master gland".

10- The region selected for saving radioactive wastes must be stable.

Exercise (3)

General exercises on the Second term

11- Diabetes disease is treated with insulin hormone.

12- Fridge is used in preservation of foods.

13- Pancreas is a doubled function gland.

14- Mendel covered the stigma of pea plant flowers during the study of hereditary traits.

15- The steel scourer used in cleaning aluminum burns more faster in a cylinder full of oxygen than its burning in air.

16- Some mutation do not transmit from a generation to another.

17- Calcium hydroxide is used in civil works.

18- Ionic compounds react faster than covalent ones.

10) State the contributions of the following scientists:

1- Ohm

2- Mendel

3- Watson and Creek

4- Henry Becqurel

5- Ali Mostafa Mosharafa

Exercise (3)

General exercises on the Second term

11) What is meant by each of the following ?

1- Reducing agent

2- Chemical reaction

3- Neutralization

4- Substitution

5- Rate of chemical reaction

6- Catalyst

7- Ohm's law

8- Voltmeter

9- Electric potential

10- Resistance

11- Rem

12- Radioactivity

13- Electric current

14- Genes

15- Mendel's first law

16- Nucleotide

17- Mutuation

18- Hormone

19- Ductless glands (endocrines)

20- Gametes

21- Coulomb

22- Current intensity

23- Mendel's second law

Exercise (3)

General exercises on the Second term

12) Answer the following questions:

1- Calculate quantity of electricity when an electric current of intensity 18 ampere passes for 7 minutes through a conductor.

2- Calculate the electric current intensity when a quantity of electricity of 600 coulomb passes for 3 minutes in a conductor.

3- Calculate the potential difference between two points, if the work done to transfer a charge of 600 coulomb is 16600 Joule.

4- Calculate the e.m.f for a battery consists of 3 cells, the e.m.f for each 1.5 volt when they are connected :

a) In series

b) In parallel.

5- Calculate the potential difference between the terminals of an electric set its resistance is 30 ohm and the intensity of the passing electric current is 10 ampere.

6- Use the following symbols to express the results of mating between a short stemmed pea plant (tt) and a long stemmed pea plant (TT).

Exercise (3)

General exercises on the Second term

13) Put (√) or (X) in front of each statement:

1- Fluoride ion is a negative ion as it loses an electron.

2- The ability to roll the tongue in a tube shape from the dominant trait in human.

3- Dwarfism is a continuous growth of human limb bones, so the person becomes a giant.

4- Hormones are secreted by the duct glands.

5- Nitric acid is used in batteries industry.

6- Dynamo produces an alternating electric current.

Exercise (3)

General exercises on the Second term

14) Mention the most important uses for each of the following:

1- Direct current

2- Ohmmeter

3- Ammeter

4- Alternating current

5- Sliding rheostat

6- Voltmeter

7- Folic acid

8- Calcium carbonate

9- Dry cell

10- Sodium nitrate

11- Dynamo

12- Nuclear energy in the space exploration field

13- Silver nitrate

14- Nuclear energy in the drilling field

15- Insulin hormone

16- Nuclear energy in agricultural field

Exams

Examination (1)

Answer the following questions:

Q1: A) Complete the following statements:

1- ..... gland secretes ..... hormone which controls the general growth of the body.

2- ..... is used for measuring current intensity, while ..... is used to measure potential difference.

B) Correct the underlined words

1- The fused ear pinna is a dominant hereditary trait.

2- Coulomb is used for measuring electromotive force.

Q2: A) Write a scientific term for the following statements

1- Chemical substances that control and regulate the function of most body organs.

2- Substance that gives oxygen and takes hydrogen.

3- The state of a conductor that allows the passage of electricity from or to it.

B) Explain each of the following:

1- Pituitary gland is called "the master gland"

2- On pollination of a red flowered pea plant with a white flowered pea plant, all offspring are red flowered.

3- Some mutation are not transmitted from a generation to another.

Exams

Q3 : Choose the correct answers:

1- Calcitonin hormone is secreted from .....

a- pancreas b- thyroid gland

c- pituitary gland d- adrenal gland

2- Which of the following characters is dominant in humans ?
.....

a- Smooth hair b- Blue-coloured eyes

c- Absence of freckles

Q4 :A) Compare between each pair of the following:

Saturated and super saturated solutions.

B) What is meant by the principle of complete dominan
Give some examples.

Exams

Examination (2)

Answer the following questions:

Q1: A) Choose the correct answers:

1-Heating of calcium carbonate produces…….

a) calcium bicarbonate and carbon dioxide.

b) calcium hydroxide and carbon dioxide.

c) calcium oxide and carbon monoxide.

d) calcium oxide and carbon dioxide.

2- The unit that is used in measuring electric resistance is ……

a) ampere b) ohm c) volt d) coulomb

B) Give scientific explanation for each of the following:

1-Burning of the steel scoures used for cleaning aluminum in a jar full of oxygen is faster than its burning in atmospheric air.

2- The limbs bones of some people grow continuously, so they become giants.

C) What is meant by each of the following:

1- Diabetes. 2- Natural radioactivity.

Q 2: A) Draw a fully detailed diagram showing the feedback mechanism for homeostasis and maintaining the human blood sugar.

B) What is the difference between each pair of the following:

1- Induced and spontaneous mutations (in terms of their way of occurrence).

2- Physical , genetic and cellular effects resulted by radiation.

Exams

C) What would happen to ?

1- Blood sugar level, when pancreas does not secrete glucagon hormone.

2- Intensity of an electric current passing through a circuit, when the wire length of the sliding rheostat connected in this circuit is increased.

Q 3: A) Write the balanced chemical equations for the following reactions:

1- Addition of magnesium to copper sulphate solution.

2- Addition of zinc to dilute hydrochloric acid.

3- Heating of sodium nitrate.

B) Mention the following :

1- Mendel's first law

2- The law that is used to determine the value of an unknown resistance using electrical measurements.

C) Given three identical electric cells, the e.m.f. of each is 1.5 volt. Show by drawing how to connect them to produce:

1- A battery its e.m.f. is 1.5 volt.

2- A battery its e.m.f. is 3 volt.

3- A battery its e.m.f. is 6 volt.

Q 4: A) Calculate the quantity of electricity that passes in a conductor of a resistance 2200 ohm for two minutes when it is connected with a source of electric potential 220 volt.

B) What is the scientific ideas for .....?

1- The dominance of presence of cheek dimples over their absence.

C) What are the precautions on dealing with radioactive wastes ?

Exams

Examination (3)

Answer the following questions:

Q1: A) Choose the correct answer:

1- The hormone that controls calcium level in the blood is .....

a- calcitonin b- thyroxin c- insulin d- adrenalin

2- The potential difference is measured by using ..... apparatus

a- ammeter b- ohmmeter c- voltmeter d-wattmeter

3- The substance that changes the rate of the reaction without itself being changed is known as ...

a- oxidizing agent b- reducing agent

c- active agent d- catalyst

B) Give reason for each of the following:

1- The stopping of body growth, so the person becomes a dwarf.

2- Calcium hydroxide is used in the civil works.

C) What is meant by each of the following:

1- The dominant trait. 2- Radioactive element

Q2: A) Draw a fully labeled diagram showing the relation between the secretion of the thyroid stimulating hormone and thyroxin hormone.

B) Write the difference between each pair of the following:

1- Connection of cells in series and in parallel (according to the resulted e.m.f.).

2- Spontaneous and induced mutations (in terms of the possibility to control them).

Exams

C) What would happen to ..... ?

1- The human as thyroxin hormone secretion is increased.

2- Ammeter and voltmeter readings used in verifying Ohm's law if the resistance is burnet.

Q3: A) Write the balanced chemical equations for the following reactions:

1- Reduction of hot copper oxide by hydrogen.

2- Addition of hydrochloric acid to calcium hydroxide solution.

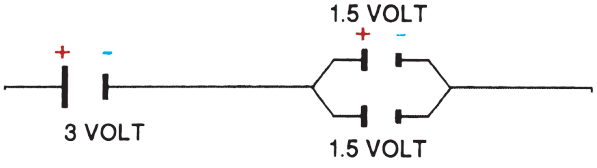
3- Placing aluminum turnings in dilute hydrochloric acid.

B) Mention each of the following:

1- Mendel's second law.

2- The two types of electric resistance.

Q4: A) Calculate the e.m.f of the battery in the opposite figure.



B) Draw the circuit used to deduce the relation between the intensity of an electric current passing through a resistance and the potential difference between its terminals.

C) Mutations vary according to several factors:

1- What are these factors ?

2- Briefly discuss one of these factors.

Exams

Examination (4)

Answer the following questions:

Q1: A) Complete the following statements:

1- When glucose level is increased in the blood, pancreas secretes …. hormone which stimulates the body to absorb…… from the blood.

2- Electric current intensity is measured by …. apparatus and its measuring unit is ……..

3- The changing in nature of genes that control the organism's traits is known as ……

4- The resistance faces the flow of electric current in a conductor is known as …….

B) Give reasons for each of the following:

1- The usage of alternating current is preferred than the usage of the direct current.

2- Magnesium can replace copper in its salt solutions, while the opposite is impossible.

C) Give the scientific term for each of the following:

1- Chemical reactions in which double exchange of ions of two different compounds to produce two new compounds takes place.

2- The substance that takes oxygen or gives hydrogen during a chemical reaction.

3- The changing in concentration of the reactants and products per a unit time.

Q2: A) Compare between:

1- Solutions types. 2- Oxidation and reduction.

Exams

B) Show by drawing how electric cells are connected in:

1- Series 2- Parallel

C) 10 coulomb was passed through a conductor of a resistance 22ohm. Calculate the potential difference between its terminals.

Q3: A) Draw an electric circuit used to verify Ohm's law, and state Ohm's law and its mathematical relation .

B) Write the balanced chemical equations for the following reactions:

1- Reaction of sodium with water and mention the precautions taken for this reaction.

2- Reaction of hydrochloric acid with sodium hydroxide, and mention the name of the reaction.

C) Mention the factors that affect the rate of a chemical reaction.

Q4: A) Mendel assumed a group of hypotheses to explain the appearance of the dominant trait and the disappearance of the recessive trait in the individuals of the first generation in the experiments he conducted on the pea plant. Explain these hypotheses.

B) State the scientific idea for each of the following:

1- The dominance of curly hairs on the smooth one.

2- Production of more larger and sweeter taste seedless fruits.

C) Explain the findings of the two scientists Watson and Creek of the structure of DNA molecule model.

Exams

Examination (5)

Answer the following questions:

Q1: Complete the following statements:

1- Red mercuric oxide decomposes by heat into ..... and .....

2- $2NaNO_3 \xrightarrow{\Delta}$ ..... + ...

3- $Zn + 2HCl \rightarrow$ ..... + ...

4- The factors that affect the speed of chemical reaction are .... ,.....,..... and.....

Q2: A) Compare between:

1- Oxidizing and reducing agents.

2- Direct and alternating current.

B) Put (√) in front of the correct statement, and (X) in front of the wrong ones :

1- Chloride ion has a negative charge as it loses an electron.

2- Dwarfism is the continuous growth of the limbs bones, so the person becomes a giant.

3- The ability to roll the tongue in a tube-form is one of the human dominant traits.

Q3: A) Explain an activity that illustrates:

1- Effect of temperature on the rate of a chemical reaction.

2- Determination the value of an unknown resistance.

B) What is meant by each of the following ?

1- Radioactivit .

2- Heterogeneous mixture.

3- Bases

4- Induced mutation.

Exams

Q4: A) Show by drawing the method used for:

1- Connection of three cells in series and also in parallel.

2- Determination the potential difference between the terminals of an electric lamp.

B) Give reason for:

1- Learn to walk in children is not considered a genetic trait.

2- Red precipitate is formed on addition of magnesium to copper sulphate solution.

Exams

Examination (6)

Answer the following questions:

Q1: Complete the following statements:

1- Chemical reaction is a process involves ..... in reactants molecules and formation of ..... in products molecules.

2- $CuSO_4 \xrightarrow{\Delta}$ ..... + ...

3- ..... acid is produced in human body during physical exercises.

4- Nuclear energy is used in medicine in.....and.....

Q2: Compare between :

1- Oxidation and reduction.

2- Ammeter and voltmeter.

Q3: A) Put sign (√) in front of the correct statement, and (X) in front of the wrong ones :

1- Sodium ion is positive (Na^+) as it gains an electron.

2- Mutation vary according to their sites of occurrence, inheritance and origin.

3- Hormones are secreted from duct glands.

B) Calculate the current intensity resulted when a quantity of electricity of 6000 coulomb is passed in a conductor for 10 minutes.

Q4: A) Explain an activity that illustrates:

1- Effect of surface area on the rate of chemical reaction.

2- Verifying of Ohm's law practically.

Exams

B) Define each of the following:

1- Homogenous mixture.

2- Super saturated solution.

3- Acids

4- Potential difference.