Sabaragamuwa Provincial Department of Education

Third Term Test - 2020

Grade 11

Science
Part II

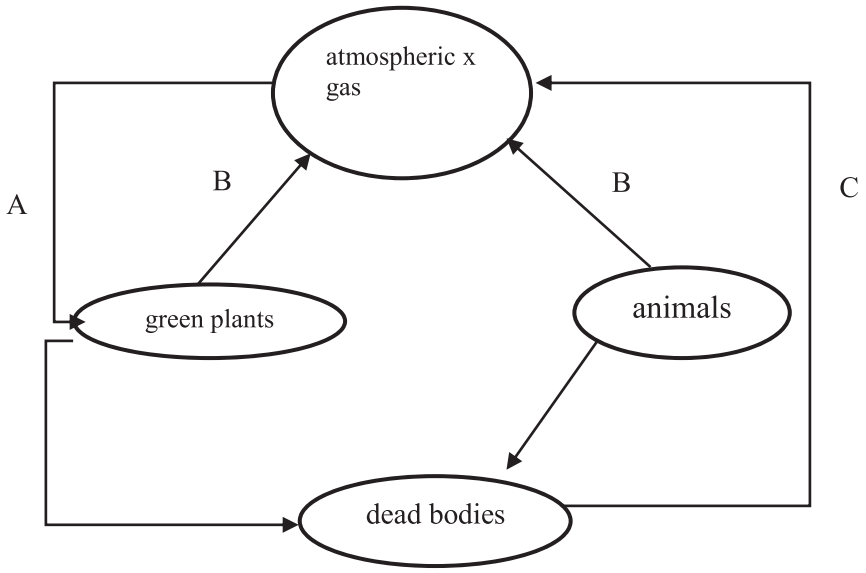
Time :- 3 hours

Instructions

- Use clear handwriting
- Answer part A in the given space.
- Select 3 question from part B and answer them.
- **Connect A and B parts and submit it**

Part A

1. (A) Cycling of essential chemical elements in the bio sphere is called bio chemical cycles. It helps to maintain the balance of the environment.



1.1 Which bio chemical cycle is represented in the above diagram?(1)

.....,.....

11. Mention the reactions relevant to A , B & C(3)

A..... ....B .....

C.....

111. Which organelle does the function of B in living cells?(1)

.....

1V. a. What is the special name used for function C which is done by living organisms?(1)

.....

b. Mention 2 ways how the function C helps to keep the balance of the environment (2)

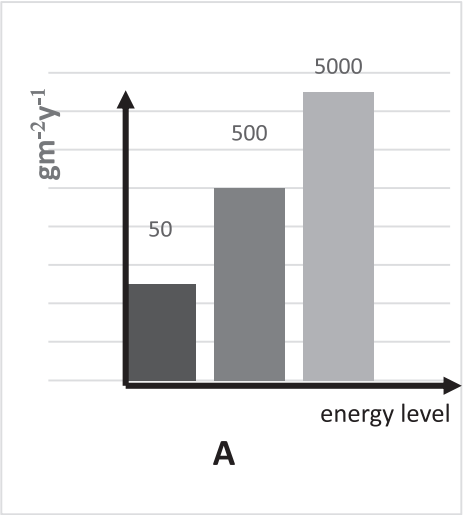
.....

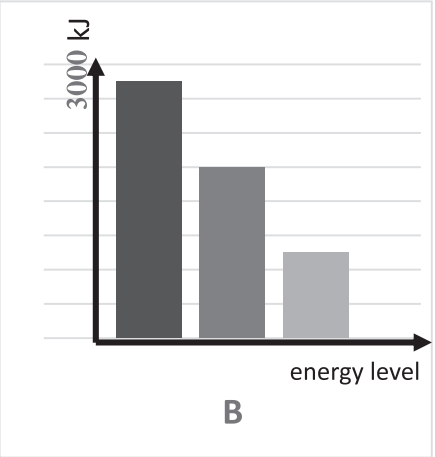
.....

V. When the process B is reduced the balance of the cycle is damaged. Give a direct influence of environmental pollution caused by this.(1)

.....

(B) In the bio sphere the enegery is absorbed by autotrophs. Then it flows to energy levels. So animals get energy. The following diagram show two charts related to environmental pyramids.





1. What type of an environmental pyramid is represented by graph B?(1)

.....

B. Write a food chain related to A. (2)

.....

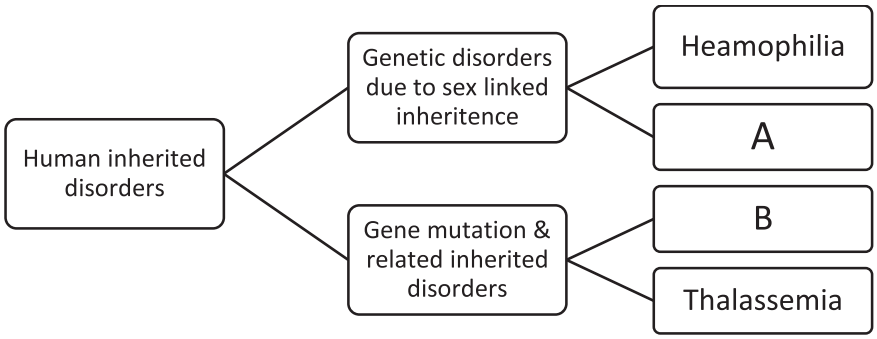
11 .Which energy source gives enegry to bio sphere?(1)

.....

111 . What is meant by energy dissipation in a food chain ?(2)

.....

2. (A) Humans get various diseases due to heridity.The folowing diagram is related to it.



1. Mention A & B diseases.(2)

A .....B . .....

11. If the gene relevant to heamophillia is h, mention the gene composition of a diseased boy.(1)

.....

111. Write a reason for gene mutation.(1)

.....

1V. Thalessimia is a disease that occurs due to gene mutation in a component of blood.

What is that component?(1)

....

(B) The diagram shows a cross section of a dicot stem.

1. Name X & Y tissues.(2)

X .....

Y .....

11. What is the function of Z tissue?(2)

.....

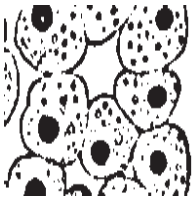
111. In which kind of flowering plants the tissue Z cannot be found?(1)

.....

1V. Mention a feature of a flower inplants mentioned in III above. (1)

.....

(C) The cell is the structural and functional unit of living beings.



A

B

1. Identify animal and plant cells from A & B.

A. ..... B. .....(2)

11. What is the structural unit you used to identify it?(2)

.....

111. Write the name & function an organelle in A.

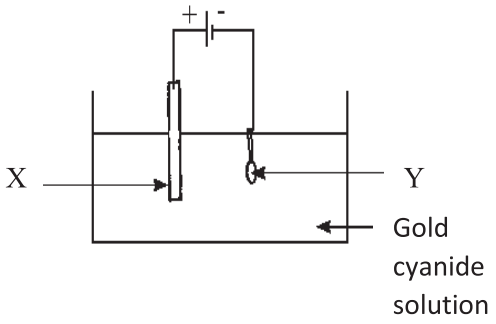
Organelle.....Function..... .....(2)

3. (A)This is an apperatus arranged to apply gold on a silver spoon by electroplating.

I. What is called as elecrtoplating

.....

.....(2)



II. Name X and Y metals

X .....

Y .....(2)

III. Write a factor necessary to be gold cynide solution to obtain a high quality plating of gold?

..... (1.)

IV. What is the elctrolyte necessary to apply copper on an iron spoon?

..... (1)

(B) Oils extracted from plant parts are called essenatil oils.

1. Give two methods of separating essentail oils.

1. ..... 2. .....(2)

11. Mention 2 plant parts which contains essential oil in cinammon.

1. ..... 2. ..... (2)

111. What is the technique used to identify poisonaous chemicals in water bottles in the market?.

.....(1)

(c) If the following statements are correct mark **(T) and if they are incorrect** mark**(F) in the brackets.**

1. Copper sulphate recats with Zinc ( )

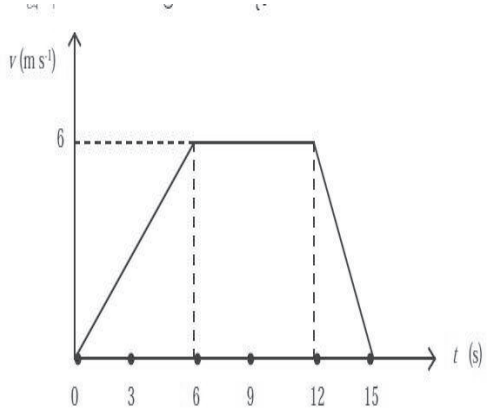
11 .Tin metal can be separated by natural methods ( )

111. Silver reacts with dilute hydrochloric acid and release hydrogen ( )

1V. Using zinc to protect corrosin of iron is called cathodic protection. ( )

V A+ B ⟶ C This reaction is a combination reaction. ( )

4. (A) **This graph shows the motion of a train which starts from rest.**



1. What is the maximum velocity of the train?

..... (1).

11. What is the acceleration of the train within first 6 seconds?

.....

.....(2)

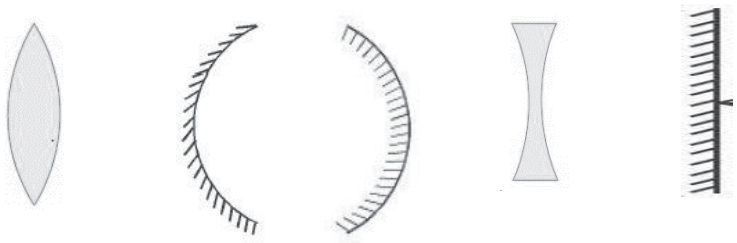
111. What can you say about the motion of the train from 6-12 s. (2)

.....

1V. What is the total distance of the train?

.....(2)

(B) The diagrams show few equipments of light.



P Q R S T

1. Name these equipment.

P.....Q.....

R..... S.....(2)

11. Name the equipment used at following occasions?

a. beauty salons .....

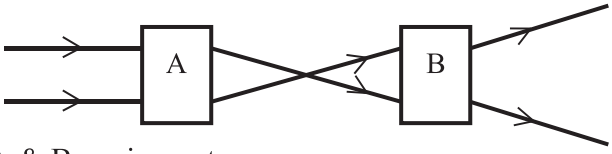
b. side mirror of vehicles.....(2)

111. Write 2 features of the image formed by T.

.....(2)

.....

1V.The following diagram shows how light travels through optical instruments A & B.

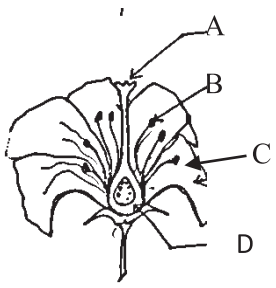


Name A & B equipments.

A. ..... B. .....(2)

Part B

5. (A) The sexual structure of the flowering plant is the flower.



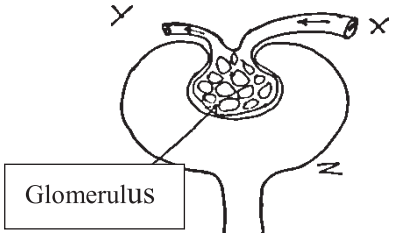
1 .Which parts of the flower belong to gynoecium? (2)

11. Write the functions of B & C (2)

111. Which part of the flower turns to a fruit after fertilization? (1)

1V. write an advantage of sexual reproduction and asexual reproduction (2)

(B) The diagram shows the structural unit of a kidney.



1.. Name x , y & z parts (3)

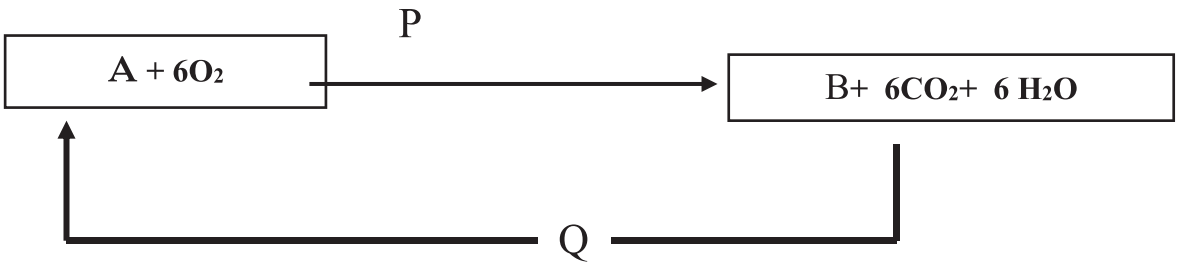
11. Give a structural difference between X and Y (1)

111. Mention 2 components found in X which cannot be found in Y (2)

1V. What is the main nitrogenous excretory matter in humans?

Which organ produces it? (2)

(C) P& Q are two functions in human body.

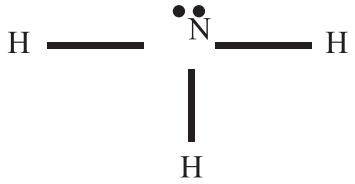


1. Name P& Q processes (2)

11. Write the chemical formula of A (2)

111. What is the source that provides B for process Q? (1)

6. (A) This is the lewis structure of Ammonia.



.

1. a. Draw the cross & dot diagram for NH_3 (2)

b. What is the bond between N and H? (2)

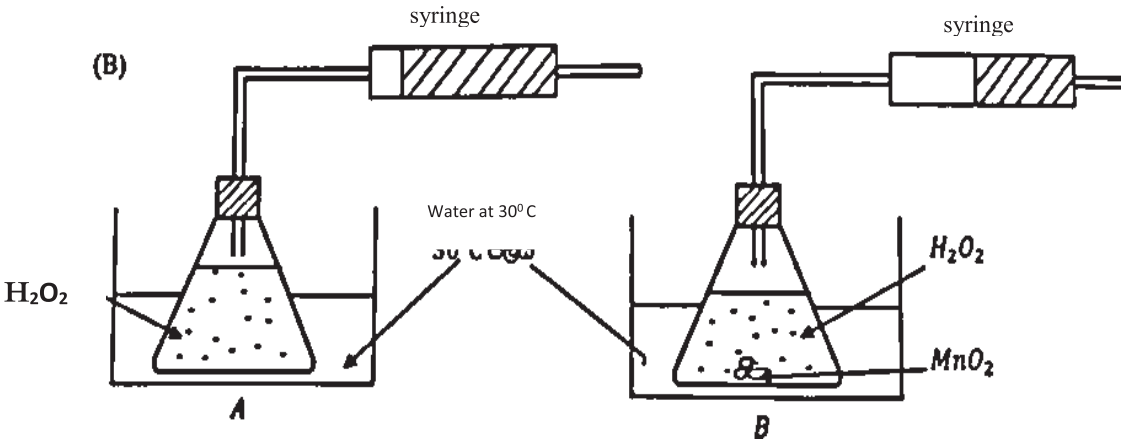
c. Write two features of compunds with bonds mentioned at (b) above. (2)

11 What is the most abundant N source in the nature? (1)

111. Calculate the percentage of Nirtogen in Ammonia (2)

(N =14 ,H =1)

(B) Chemical reactions cause lot of cahanges in the environment. This apperatus is set to find how a certain factor influence the rate of a reaction.



1. a. In which apperatus more air bubbles can be seen? (1)

b. What is the reason for that observation? (2)

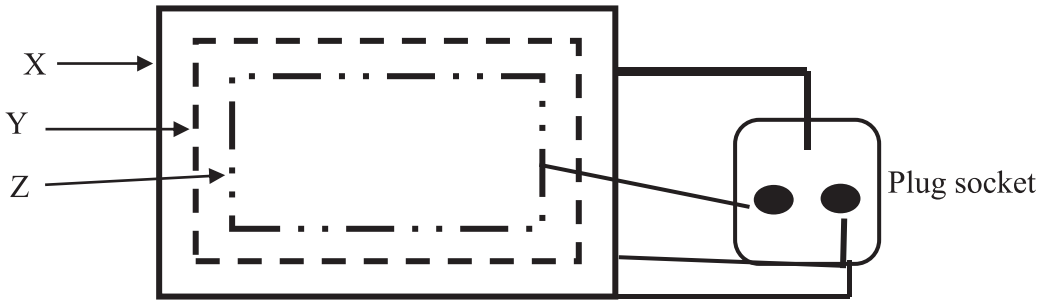
11. What is the gas collected in the syringe? How it is identify ? (2)

111. What is the reason to keep the H_2O_2 containing flasks in water? (2)

1V. Write the balanced chemical equation for the reaction of H_2O_2 (2)

V. Write 2 other factors that affect the rate of a reaction. (2)

7 .(A) The diagram shows a household electric circuit.



1. Name the circuit shown in the above diagram (1)

11. a. Name X,Y Z cables (3)

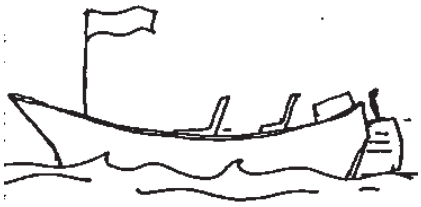
b. Mention the standard symbols and colours used for the above mentined cables. (3)

111. The cross section of X cable is gerater. Explain the reason (2)

1V. Name the following equipments in the circuit in correct order from the outside of the house to inside of the house.

(isolater,overload circuit breaker,trip switch,electric meter) (2 / 0)

(B) A boat floats on water. the mass of it is 2000 kg.

A  B

1. Mention the forces which act on the boat (2)

11. a. What is the weight of the boat? (1)

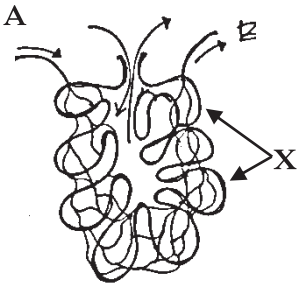
b. Calculate the upthrust which acts on the boat (1)

c. Calculate the weight of the volume of water which is displaced by the boat. (2)

111. Mention the law related with upthrust. (2)

1V. If the boat needs to move towards A, to which direction do we need to apply force? (1)

(8) (A) Multi celluar organisms have surfaces for respiration.The diagram shows the respiratory surface of human.



1. Name the struture X .(2)

11. What is the respiratory surface of human?

111. Mention 2 differences in the composition of blood in A & B.

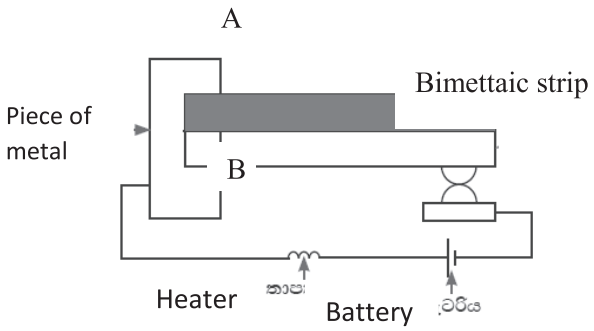
(2)

1V. a.Which component of blood helps to transport the gas diffused through X?(2)

b.Mention the balanced chemical equation for the function related to the gas mentioned at (a) (2)

V. Write 2 strutural features of a respiratory surface (2)

(B).When matter is heated it expands. The diagram shows an instance where expansion is used with a bimetalic strip.

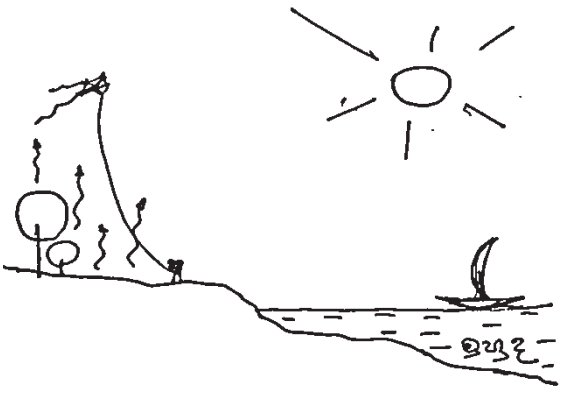


1. a. When the temperature of the bimettalic strip increses to a certain extent the current supply is disconnected. Draw the bimettalic strip at that moment and name the 2 metals used in it. (2)

b. Which metal expands more from the metals you mentioned above? (2)

11. Write 2 occasions where bimettalic strips are used in day today life. (2)

(C). Air expansion is useful in day today life.



1. What is the natural phenomena related to air expansion shown in the diagram? (2)

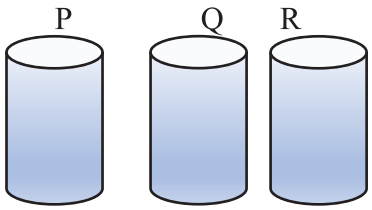
11. Explain the reason causing above phenomena. (2)

(9)

(A) P,Q,R are 3 solutions.you are given a blue litmus paper.

- P solution turns blue litmus to red

i. What quality is shown by solution P? (2)
ii. How can you identify the basic solution?(2)
iii. What is the pH range of an acid?(2)

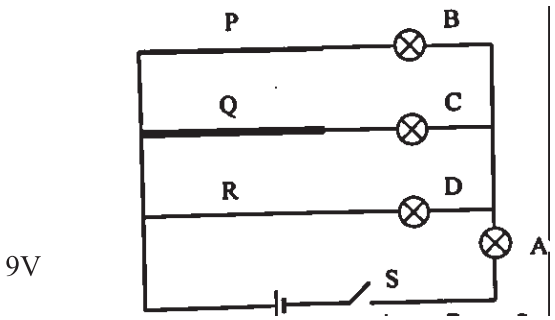


iv When you are stung by a wasp , the pain reduces by appalying lime juice there.Give reasons for that (2)

iv. Write the balaced chemical equation for the reaction between hydrochloric acid and Sodium hydroxide solution. (2)

v.

(B) In the circuit P, Q,R are wires with different cross sections. The material of the wire and length are equal.The bulbs are also with same resistance.



I. When the switch is closed , mention the bulbs that lights up with maximum and minimum brightness. (2.)

II. Give reasons for above 1 observation. (2)

III. Mention 2 other factors that affects the resistance of a conductor . (2)

IV. P,Q R wires are equal and the resistance of A,B C D bulbs are 6Ω in each.

a) Calculate the equivalent resistance of A,B, C, D bulbs (2)

b) What is the main current flows in the circuit at that moment? (2)

* * * * ** * * *