

2010 WASSCE PRIVATE INTEGRATED SCIENCE 2

Paper Two

1. a) i) What is meant by the rate of chemical reaction?

ii) Explain how **each** of the following factors affect the rate of a chemical reaction.

α) concentration.

β) surface area.

b) i) Define work.

ii) A stone of mass 500.0g is raised to height of 20.0 m above the ground. If the acceleration due to gravity is 10.0 ms^{-2} , calculate the work done on the stone.

c) Describe the mechanism of inhalation in humans.

d) State **one** use **each** of the following equipment used in crop production:

i) garden fork;

ii) hand trowel;

iii) secateurs;

iv) shares;

v) mattock.

2. a) Explain why:

i) wood is used as a handle for some cooking utensils;

ii) gaps are left in railway tracks.

b) Classify the following groups of crops as vegetables, cereals, grain legumes, and root tubers:

i) Cassava and sweet potatoes;

ii) Cowpea and groundnut;

iii) Maize and millet;

iv) Pepper and tomatoes.

c) i) What is immunity?

ii) State three ways by which humans acquire immunity.

d) List two examples of processing devices of a computer.

e) A piece of zinc metal was placed in a beaker containing dilute hydrochloric acid.

i) Write a balanced chemical equation for the reaction.

ii) If 5.0 g of zinc was placed in the acid, how many moles of hydrochloric acid would be required to react with the zinc? [Zn= 65.4, H = 1, Cl= 35.5]



3. a) i) Explain the term parturition as applied to animal production.
ii) State three signs shown by an animal when parturition is about to occur.
- b) i) What is plant tissue culture?
ii) State three advantages of propagating a plant by tissue culture.
- c) The atomic number of atom X is 17 and its mass number is 35.
i) Indicate the number of protons, electrons and neutrons in the atom
ii) Draw electron configuration of the atom showing positions of the protons and the arrangement of the electrons in the various shells.
- d) i) What is the centre of gravity of a body?
ii) Explain why it is more suitable to locate the load compartment of a bus under the passenger seats than at the top of the bus.
4. a) Describe how pollination takes place in an insect-pollinated flower.
4. a) i) Explain the following statement: Though glucose is the substance formed during photosynthesis in leaves, it is starch which is tested for to show that photosynthesis has taken place.
b) State three uses of computers in medicine and health care delivery.
c) Consider the following organic compounds
 C_3H_6 ; C_3H_5OH ; CH_3COOH and CH_3COOCH_3 . Select one compound which will
i) undergo polymerization,
ii) give a pleasant smell,
iii) liberate carbon dioxide with sodium hydrogen trioxocarbonate (IV)
iv) decolourize bromine water.
- d) Draw and label a ray diagram to show how the image of a point object is seen in a plane mirror.
e) State three measures of reducing incidence of diseases in a fishpond.
5. a) i) What is a computer hard disc?
ii) State two advantages of hard disc
- b) State four benefits of nuclear energy to humans.
- c) i) What is weathering of rocks?
ii) State two effects of temperature on weathering of rocks.
- d) Describe an improvement practice that could be adopted for vegetable crop production in the following soil conditions:
i) acidic soil;
ii) saline soil.
- e) i) List two kingdoms used in the classification of living things .
ii) State two reasons for classification of living things

6. a) A simple electrical circuit consists of 3 V battery connected to a bulb of resistance $20\ \Omega$

i) Draw the circuit diagram of the arrangement.

ii) Calculate the current that flows when the bulb is in use.

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b) i) What is deep litter system as applied to poultry production?

ii) State three measures to be adopted to maintain a good litter house.

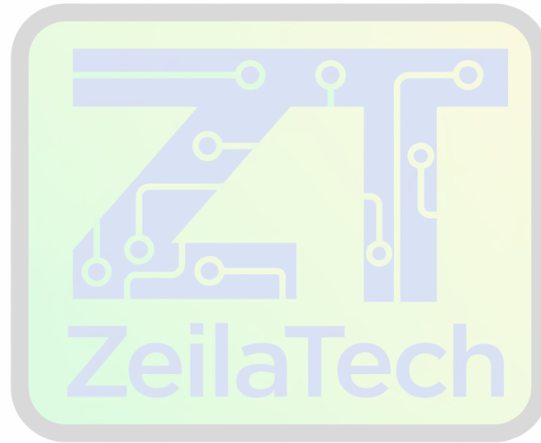
c) i) Explain the term human population.

ii) State three factors that affect the distribution of human population.

d) Explain briefly how each of the following processes occurs:

i) melting of a solid;

ii) condensation of gas.



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