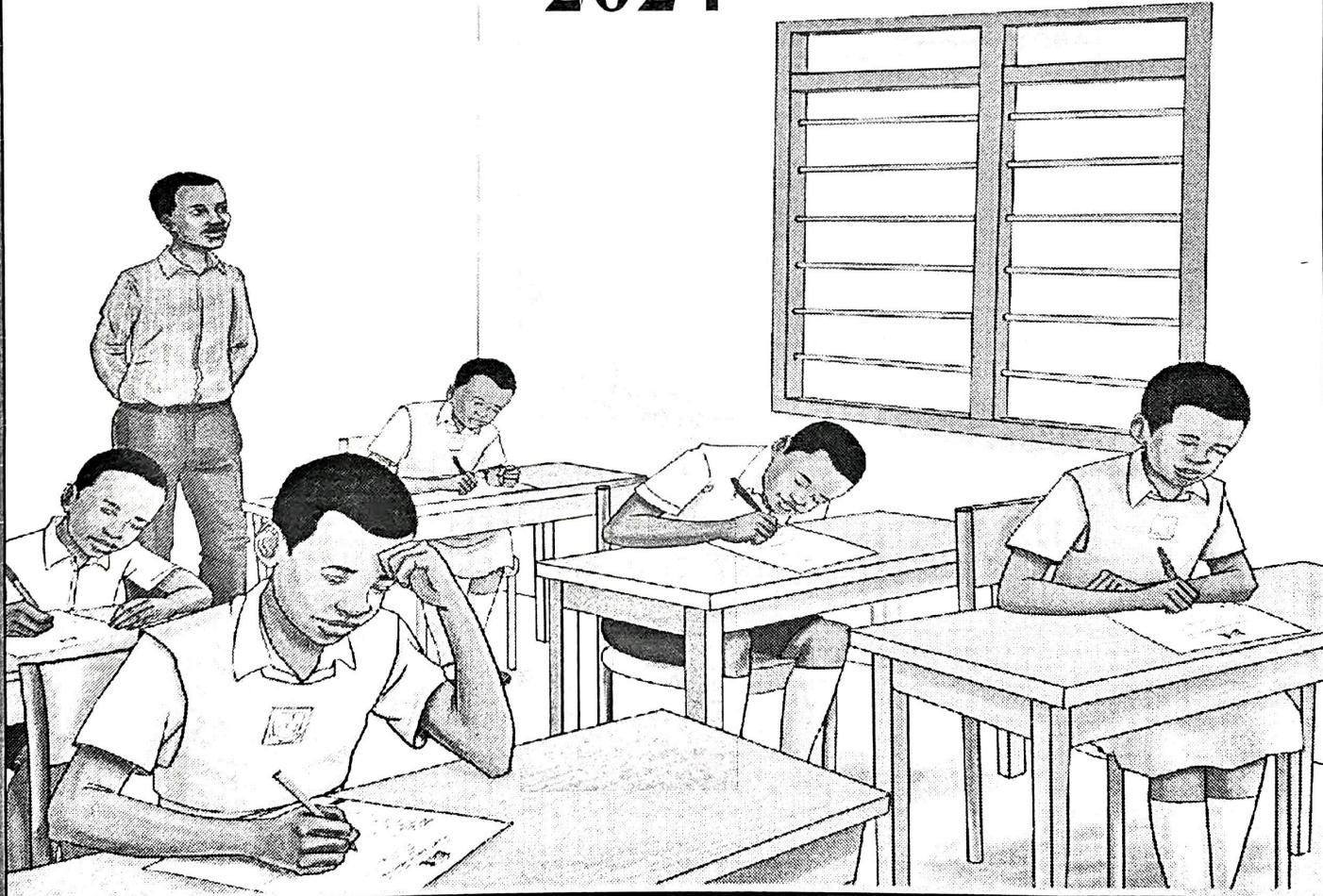


SUREKEY EXAMINATIONS BOARD



"Don't speak for Quality, Let Quality Speak for itself"

2024



INTEGRATED SCIENCE MAGIC SERIES
OFFICIAL MARKING GUIDE

SECTION A: 40 MARKS

1. Name the deficiency disease that causes stunted growth in children.
✓ **Kwashiorkor**
2. State any **one** difference between the worker bee and the drone bee.
✓ **The drone bee is a male bee in the hive while the worker bee is the female sterile bee in the hive.**
✓ **The drone bee develops from an unfertilized egg while the worker bee develops from a fertilized egg**
✓ **The drone bee has no stinger while the worker bee has a stinger**
✓ **The drone bee has no pollen baskets while the drone bee has pollen baskets on the hind legs**
✓ **The drone bee has no wax glands while the worker bee has wax glands.**
3. Give any **one** example of fertilizers that do not pollute the soil.
✓ **Compost manure // Farmyard manure// Organic mulches**
✓ **Green manure**

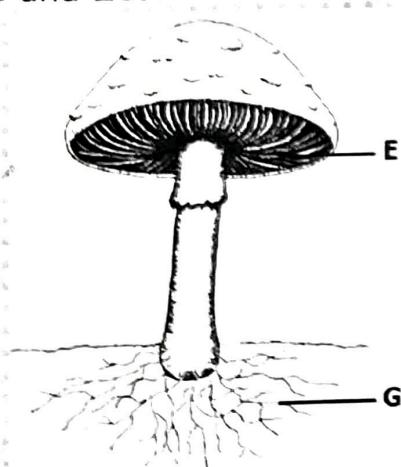
The diagram below shows a man suffering from a certain disease. Study and use it to answer questions **4** and **5**.



4. Name the insect borne disease that causes swelling of legs of the man above.
✓ **Elephantiasis**
5. Which insect vector spreads the disease that causes the legs of the man to swell as shown above?
✓ **Culex mosquito**
6. State the importance of oxygen in the human body during respiration.
✓ **It burns glucose to produce energy/ oxidizes glucose to produce energy**
7. Give any **one** way in which non flowering plants reproduce.
✓ **The reproduce by means of spores**
✓ **They reproduce by means of seeds**
8. Name the type of mechanical energy possessed by wind in the atmosphere.
✓ **Kinetic energy**

9. Mention any **one** way of identifying flesh eating mammals in the environment.
 - ✓ **Have well-developed canine teeth//Have strong sharp claws.**
 - ✓ **Have a keen eyesight//Have soft pads on their feet.**
 - ✓ **Have strong sense of smell.**
10. Give any **one** element of population and health.
 - ✓ **Family planning //Sanitation //First aid//Essential drugs**
11. State any **one** structural characteristic of blood vessels that transport blood towards the heart.
 - ✓ **Have valves//Have wide lumens//Have thin walls**
12. Give any **one** way of controlling common diseases without using drugs.
 - ✓ **Feeding on a balanced diet//Drinking boiled water**
 - ✓ **Having regular physical exercises//Proper disposal of wastes**
 - ✓ **Avoid smoking, alcoholism and drug abuse//Bathing daily**
 - ✓ **Brushing the teeth every after a meal//Wearing ironed clothes**
13. Give any **one** reason why water is not used in thermometers.
 - ✓ **Water wets the sides of the glass tube//Water is a poor conductor of heat//Water does not expand uniformly**
 - ✓ **It cannot be seen in the glass//It needs a lot of heat to expand**
14. State any **one** way in which it is important to maintain good posture.
 - ✓ **It prevents back and chest pain//It prevents dislocation**
 - ✓ **It prevents deformity of bones//It aids proper digestion of food**

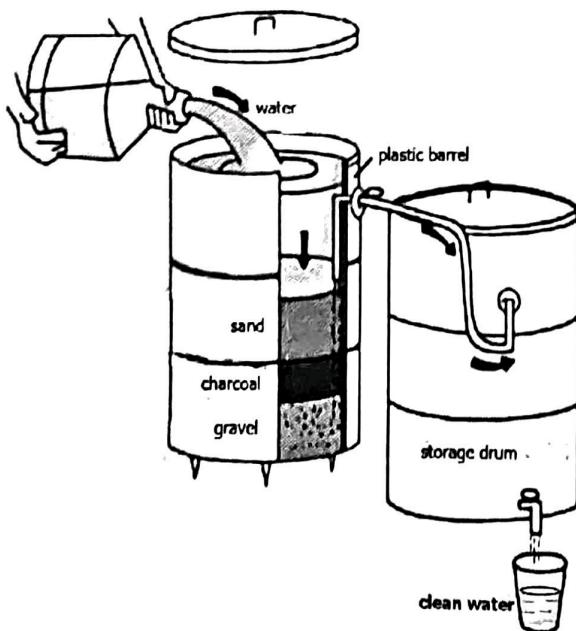
The diagram below shows a mushroom. Study and use it to answer questions **15** and **16**.



15. Name the part of the mushroom marked **G**.
 - ✓ **Hypha**
16. Give the function of the part marked **E** to the mushroom.
 - ✓ **To produce spores**
17. Mention any **one** sign of a cow on heat.
 - ✓ **The cow mounts others//Mucus discharge from the vulva**
 - ✓ **The cow urinates frequently//The cow becomes restless**
 - ✓ **The cow makes a lot of noise//The cow loses appetite to graze**
 - ✓ **The vulva swells and changes its colour to red**
18. Name the natural process in plants that increases the amount of oxygen in the atmosphere.
 - ✓ **photosynthesis**

19. State any **one** effect of biological changes in the environment.
- ✓ **They cause maturity of organisms**
 - ✓ **Some biological changes help animals to grow**
 - ✓ **The cause the formation of new cells**
 - ✓ **Some biological changes cause loss of body weight**
 - ✓ **Some biological changes make people to lose teeth and get new ones**
 - ✓ **Some biological changes can cause death of organisms through falling sick**
 - ✓ **Some biological changes cause increase in number of organisms**
20. State any **one** method that can be used to prepare a simple dish at home.
- ✓ **Mingling // Roasting // Steaming // Boiling // Frying**
21. Mention any **one** way in which too much wax affects human ear.
- ✓ **Too much wax leads to temporary/partial deafness**
22. State any **one** way in which the trees help to control soil erosion in the school compound.
- ✓ **Tree roots hold the soil particles together**
 - ✓ **Tree leaves reduce the speed of rain drops to the ground**
 - ✓ **Trees act as windbreaks**
23. State any **one** health habit that helps to maintain the proper functioning of the human digestive system.
- ✓ **Feeding on a balanced diet**
 - ✓ **Proper chewing of food before swallowing**
 - ✓ **Eating well-cooked meat**
 - ✓ **Doing regular physical exercises**
 - ✓ **Drinking clean boiled water before or after eating food**

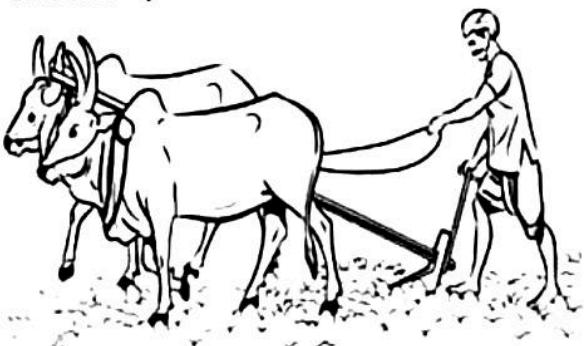
The diagram below shows a method used to obtain clean water at home. Use it to answer question **24** and **25**.



24. Identify the method of obtaining clean water above.
- ✓ **Filtration**
25. Give the reason why water obtained by the method above is not recommended for drinking yet it is clean.
- ✓ **The method above does not kill germs/ water obtained still contains germs**

26. Apart from holding the plants firmly into the soil, state any **one** other function of the roots to the plant.
- ✓ **Some roots store food for the plant**
 - ✓ **Roots absorb water and dissolved mineral salts**
 - ✓ **Some roots help plants to breathe**
27. How is the double silvered walls of the flask able to reduce heat loss by radiation? **It shiny to reflect radiant heat**
- ✓ **It has a silvery surface to reflect radiant heat**
28. State any **one** in which a child suffering from tetanus can be identified.
- ✓ **Stiff muscles//Spasms when touched//Baby stops suckling**
29. Give any **one** reason why you would not advise a farmer to use a morant hutch for keeping his/her rabbits.
- ✓ **A morant hutch is tiring to keep moving the fold around**
 - ✓ **Rabbits can easily be affected by floods**
 - ✓ **Rabbits can easily be attacked dangerous wild animals**
 - ✓ **Few rabbits are kept in the folds//It expensive to manage**
30. Give any **one** reason why engine oil is usually put on wood for electricity poles.
- ✓ **To prevent termites from damaging wood.**
 - ✓ **To make the electricity poles water resistant to prevent them rotting**
31. Which method of making temporary magnets does not require the use of a permanent magnet?
- ✓ **Electrical method**
32. Name any **one** system of keeping poultry that is suitable for commercial purposes.
- ✓ **Deep litter system//Cage/battery system**
33. Name the type of alcohol that causes blindness when taken.
- ✓ **Methanol**
34. State any **one** characteristic of objects that float on water.
- ✓ **They are less dense than water**
 - ✓ **Some floating objects displace the amount water equal to their weight.**

The diagram below shows a method used in land preparation. Study and use it to answer questions **35** and **36**.



35. Name the method of land preparation shown above.
- ✓ **Ploughing the land**
36. State the type of cattle used for preparing land in the diagram above.
- ✓ **Draught cattle/ work type of cattle**

37. Name any **one** disorder that affects muscles in human beings.
 ✓ **Strain // Muscle wasting // Muscle cramps // Muscle pull**
38. Write down any **one** life skill that school children need to develop in order to safe guard themselves against drug abuse.
 ✓ **Assertiveness // Effective communication // Self-control**
 ✓ **Self-awareness // Self-esteem // Decision making // Creative thinking**
 ✓ **Critical thinking // Coping with stress // Coping with emotions**
39. Give any **one** characteristic of images formed by a pinhole camera.
 ✓ **They are diminished // They real**
 ✓ **They are upside down / inverted**
40. State the reason why carbon dioxide is used for preserving soft drinks like soda.
 ✓ **Carbon dioxide prevents/ does not favour the multiplication of bacteria**

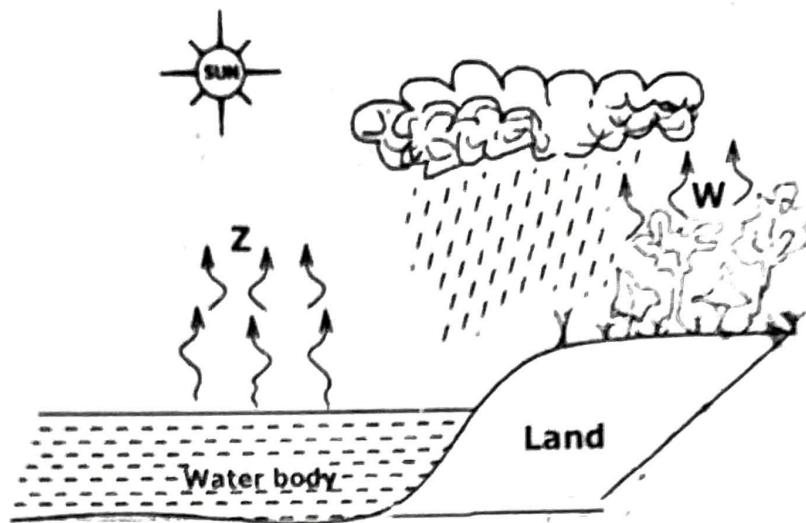
SECTION B: 60 MARKS

41. A primary five pupil mixed sugar with water and stirred, sugar dissolved in water forming a solution.
- State the reason why sugar dissolved in water.
 ✓ **Sugar is soluble in water**
 - Identify the name given to the following substances in the experiment.
 - Sugar: **Solute**
 - Water: **Solvent**
 - Name any **one** other substance that would behave as sugar when mixed with water to form a solution.
 ✓ **Salt // Glucose**
42. The table below shows groups of arthropods, their characteristics and examples of each group. Study it carefully and complete it correctly.

Groups of arthropods	Characteristics of arthropods	Examples of arthropods
Insects	Have three pairs of jointed legs Have two main body divisions They breathe through spiracles	Grasshopper
Crustaceans	They have a hard crusty skin	Crab
Myriapods	They have many jointed legs	Centipede Millipede
Arachnids	Have two main body divisions Have four pairs of jointed legs	Scorpion

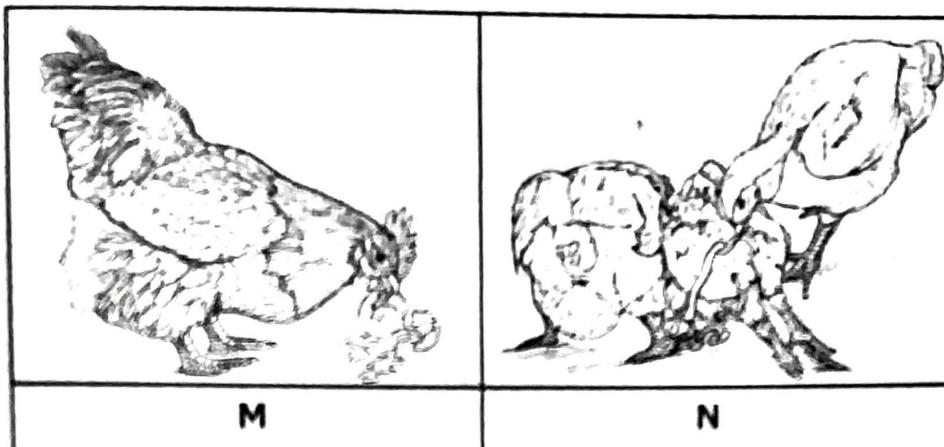
43. (a) Write down any **one** activity done by young farmers' club in a school.
- ✓ **Establishing woodlots//Bird watching**
 - ✓ **Constructing aquariums**
 - ✓ **Organizing field trips to other agricultural centres**
 - ✓ **Encouraging environment conservation**
 - ✓ **Teaching people modern methods and technology of farming**
 - ✓ **Organizing agricultural debates//Tree planting**
 - ✓ **Setting up botanical gardens//Growing crops**
 - ✓ **Rearing animals //Caring for animals and crops**
- (b) State any **two** ways in which young farmers' clubs are important in a school.
- ✓ **They help learners to acquire farming skills**
 - ✓ **They supplement the school diet through growing food crops**
 - ✓ **They boost learners' interest in farming**
 - ✓ **They enable learners get better farming methods**
 - ✓ **They equip learners with knowledge of caring for crops and animals**
 - ✓ **They encourage conservation of the environment**
 - ✓ **They help school children learn how to keep farm records**
- (d) Apart from young farmers' clubs, name any **one** other example of science oriented club in a school.
- ✓ **Wildlife clubs//Red cross clubs //Science contest clubs**
 - ✓ **Science exhibition clubs//Science quiz clubs**
 - ✓ **Science project clubs//Science paper presentation clubs**
44. (a) What is meant by the term silting?
- ✓ **Silting is the deposition of eroded soil particles into waterbodies**
- (b) State the major cause of silting in water bodies.
- ✓ **Soil erosion**
- (c) Give any **two** ways in which silting affects aquatic life.
- ✓ **Exposes aquatic animals to their predators**
 - ✓ **Leads to the death of aquatic animals**
 - ✓ **Destroys the habitats for aquatic life**
 - ✓ **Blocks food for aquatic animals**
 - ✓ **Blocks proper oxygen supply to the aquatic animals**

45. The diagram below shows a water cycle. Study and use it to answer the questions that follow.



- (b) Name the process that is taking place at **W**.
✓ **Transpiration**
- (c) State the role of the following in the diagram above.
- Water body:
Adds vapour to the atmosphere through evaporation
 - Sun: **Heat from the sun causes evapotranspiration**
- (d) What type of change takes place at **Z** in the diagram above?
✓ **Physical change (reject: condensation)**
46. (a) Mention any **two** processes that take place in the human kidney.
✓ **Blood filtration (reject: filtration only)**
✓ **Selective reabsorption**
✓ **Osmoregulation**
- (b) State any **one** way in which the function of the human Kidney is similar to that of the human skin.
✓ **Both remove waste materials from the body**
✓ **Both regulate the amount water in the body**
- (c) Give the reason why people urinate a lot during cold weather.
✓ **The sweat pores are closed thus excess water is removed by urinating**

47. The diagram below shows vices commonly found in domestic birds. Study and use them to answer the questions that follow.



- (a) Identify the forms of vices in domestic birds marked **M** and **N**.
- (i) **M : Egg eating**
 - (ii) **N : Cannibalism/vent pecking**
- (b) Give any **one** cause of the form of vice marked **M** in domestic birds.
- ✓ Failure to collect eggs on time // Poor feeding of poultry
 - ✓ Presence of broken eggshells in the poultry house
 - ✓ Too much light in the poultry house
 - ✓ Inadequate feeding of poultry
- (c) State any **one** piece of advice you would give to a poultry farmer to control the vices marked **M** and **N** among his/her domestic birds.
- ✓ Practice debeaking // Provide feeds in time
 - ✓ Hang green vegetables on raised bars
 - ✓ Keep nestling places in darkness // Provide perching materials

48. Name the form of accident whose first aid is to;

- (a) Dip the injured part in cold water. **Burns // scalds**
- (b) Fan the casualty. **Fainting**
- (c) Apply tepid sponging. **Fever // convulsions**
- (d) Pinch the soft part of the nose. **Nose bleeding**

49. (a) Write down **two** causes of short sightedness in people.

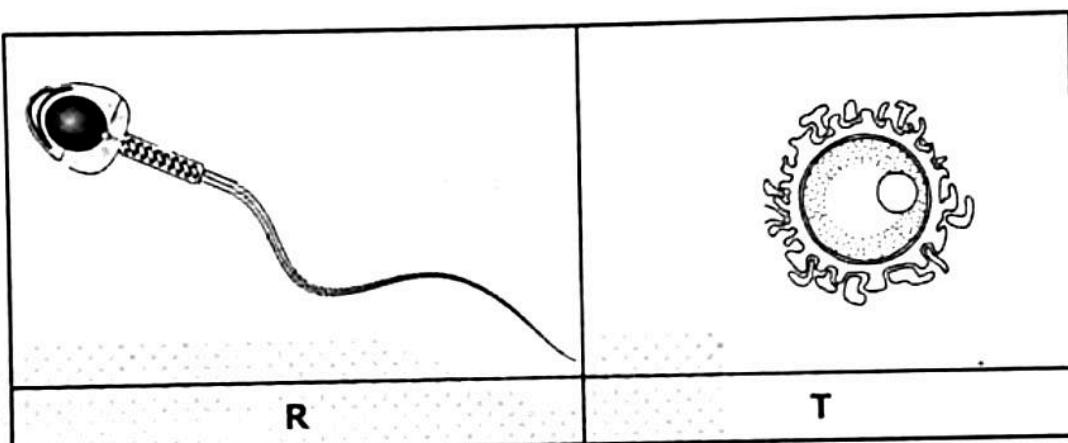
- ✓ **Too long eyeball//Too thick eye lens**

- (b) Name the type of lens used to correct short sightedness in people.
- ✓ **Concave lens/diverging lens**

- (c) Apart from short sightedness, give any **one** other defect that affects the human eye.
- ✓ **Long sightedness/hypermetropia**
 - ✓ **Colour blindness//Astigmatism // Presbyopia**

50. (a) Apart from breast feeding, give any **one** other way in which the body can acquire natural immunity.
✓ **From the pregnant woman to her unborn baby.**
✓ **Recovering from an illness**
- (b) In which way does breastfeeding help to boost the immunity the baby?
✓ **Breast milk contains antibodies**
- (c) State any **one** way in which a breastfeeding mother can increase the production of milk in her mammary glands.
✓ **Drinking plenty fluids**

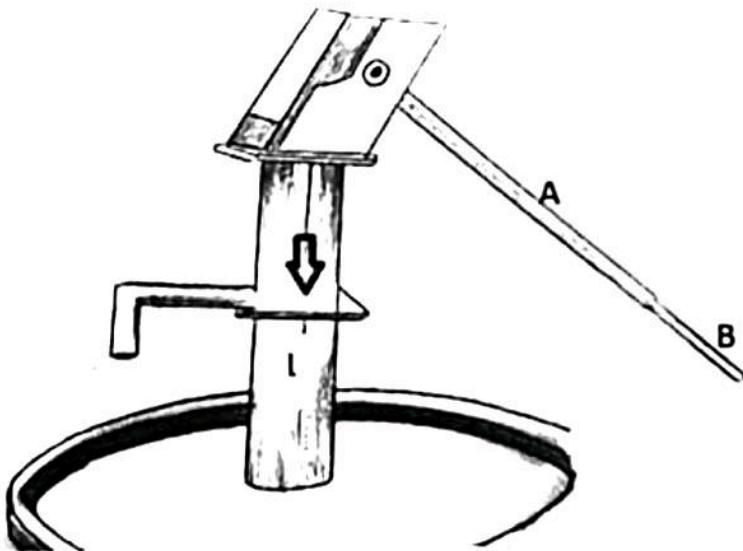
51. The diagrams below show reproductive cells in human beings. Study and use them to answer the questions that follow.



- (a) Name the reproductive cells marked **R** and **T**;
(i) **R : Sperm**
(ii) **T : Ovum**
- (b) Identify the reproductive cell that is similar to the pollen grains in plants.
✓ **Reproductive cell R / Sperm**
- (c) State what happens when the reproductive cells marked **R** fuses with the reproductive cell marked **T**.
✓ **Fertilization occurs**
52. (a) Write down any **two** examples of nonbiodegradable wastes in the environment.
✓ **Polythene bags//Plastics//Rubber //Metals**
- (b) Give any **two** ways in which nonbiodegradable wastes can be recycled in the environment.
✓ **Making sandals from old car tyres**
✓ **Making knives and pangas from metals**
✓ **Making spare parts for radios, television sets and loudspeakers**
✓ **Making saucepans from old metals**

53. (a) Name **two** types of tuber crops commonly grown by people in your locality.
- ✓ **Irish potatoes//Cassava //Turnips //White yams//**
 - ✓ **Coco yams //Beetroots(beet)//Carrots //Parsnips //Dahlia**
- (c) State any **two** structural characteristics of tuber crops.
- ✓ **They have swollen underground roots or stems**
 - ✓ **They store their food underground**
 - ✓ **They are annuals crops**
54. (a) State the recommended distance for the following places from the pit latrine.
- (i) Water source: **30 meters**
 - (ii) Kitchen: **10 meters**
- (a) State any **two** ways of controlling bad smell from a pit latrine.
- ✓ **Covering the squat hole of an ordinary pit latrine with a lid**
 - ✓ **Smoking ordinary pit latrines**
 - ✓ **Leaving a VIP latrine open**
 - ✓ **Installing vent pipes in pit latrines**
 - ✓ **Pouring ash on faeces in ECOSAN toilets**

55. The diagram below shows a borehole. Study and use it to answer the questions that follow.



- (a) Name the group of simple machines to which the borehole above belongs.
- ✓ **Levers (reject: second class levers)**
- (b) Identify the point from the borehole to which the person will use less effort when pumping water.
- ✓ **Point B**
- (c) Give a reason for your answer in (b) above.
- ✓ **Point B is further away from the pivot than point A**
 - ✓ **Point B arm is longer than point A arm.**
- (d) On the diagram above, show the position of the **load**.

Done on the diagram

END