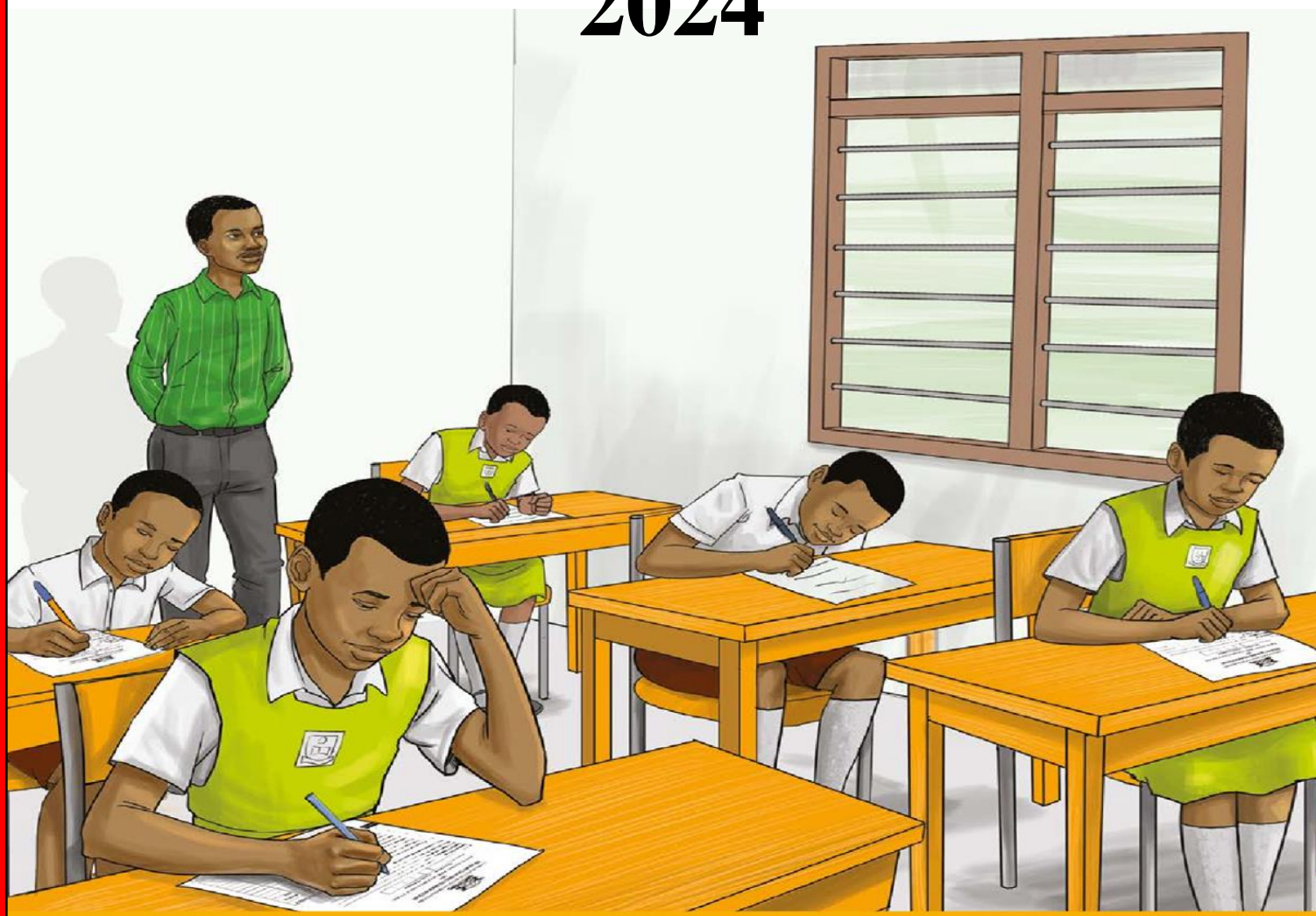


SUREKEY EXAMINATIONS BOARD



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

2024



INTEGRATED SCIENCE LOWER SERIES
OFFICIAL MARKING GUIDE

SECTION A: 40 MARKS

1. Name the best season for harvesting sweet potatoes.
Wet season/rainy season (*reject: dry season*)
2. State any **one** role of the school health committee in the promotion of health at school.
To organize cleaning campaigns in a community
To supervise Primary Health Care activities
To conduct health parades in the school//To plan for the health activities//To monitor children's hygiene//To monitor food preparation//To monitor school sanitation
3. Give any **one** factor that favours the breeding of bacteria in an area.
Presence of food//air//warmth//moisture
4. By what process does the body release energy from digested food?
By respiration

The diagram below shows a bottle of soda. Study and use it to answer questions 5 and 6.



5. Name the gas enclosed in the space marked **D**.
Carbon dioxide
6. Why do soda manufacturers usually leave the space marked **D** when filling bottles of soda?
To give/create space for the increase in volume of soda when frozen.
7. State any **one** way in which capital is important when planning to start a goat keeping project.
Capital is used to buy land//construct farm structures//buy goats to be reared//pay workers and experts on the goat farm//buy acaricides and necessary equipment//prepare pasture
8. Write down any **one** simple message that can be displayed around the school compound to encourage good health habits.
Keep the compound clean//Dump rubbish in the dustbin/ rubbish pit
Follow PIASCY messages //Wash hands after visiting the latrine
Do not litter rubbish in the school compound
Obey Standard Operation Procedures(SOPs)
(*accept specific PIASCY or SOPs messages*)
9. State any **one** characteristic of forms of energy.
They have the ability to do work
They can be transformed from one form to another
10. Name the disease of teeth whose signs are swollen gums, bright red gums and bleeding gums when brushing teeth.
Scurvy

11. Give any **one** way in which minerals can be conserved.
Having controlled mining//Making Alloys
Painting metals to avoid rusting//Recycling metal scraps
12. State any **one** danger of buying essential drugs from local shops.
A person may buy expired drugs//One may buy contaminated drugs
One may buy sub-standard drugs
A person may buy drugs that are not well prescribed
13. Give any **one** way in which people use inclined planes in their daily life.
People use ramps to load or offload goods on vehicles
People use ladders for climbing tall buildings or trees
Winding roads help people to climb mountains or steep hills easily.
Staircases are used to climb tall buildings with ease
Planks are used to raise building materials during construction
A slide is used as a playing material by children.
14. State any **one** reason why a wire mesh should be used when constructing a house for domestic rabbits.
To allow light into the hutch
To allows free air circulation
15. State any **one** effect of physical changes in the environment.
They cause rain formation//They change the volume and density of objects//They change the shape of objects//
They cause cooling//They form dew in the environment
16. State the importance of using sugar when preparing Oral Rehydration Solution (ORS) for a dehydrated patient.
To replace the lost energy/ to restore body energy

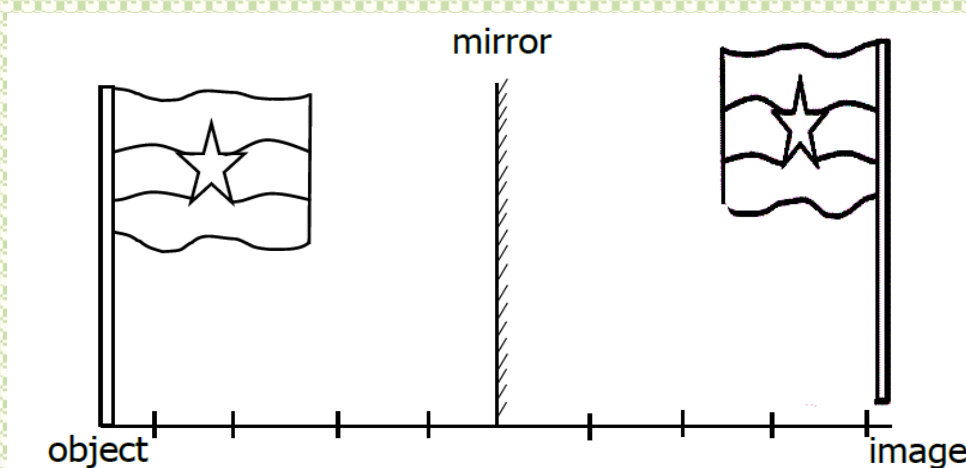
The diagram below shows a waste management activity commonly done by people in our community. Use it to answer questions **17** and **18**.



17. Identify the waste management activity shown in the diagram above.
Recycling wastes
18. Give any **one** way in which the activity above helps in the management of wastes in the environment.
It reduces the accumulation of the car tyre wastes in the environment
It controls soil pollution by old car tyres
19. Write down any **one** method of preserving food that drains moisture from the foodstuff.
Sun drying// Smoking// Salting

20. State any **one** difference between sound energy and light energy.
Light enables us to see while sound enables us to hear
Light travels through rays while sound travels through waves
Light does not require a medium of transmission while sound does.
Light travels faster than sound.
21. Name any **one** human body organ where involuntary muscles can be found.
Heart // Stomach // Urinary bladder // Lungs // Eyes //
22. State any **one** way in which simple machines make work easier.
They reduce the effort needed to do work
They increase the speed of doing work
They multiply force and distance used to do work
They change the direction of force
23. Give any **one** effect of food taboos in nutrition.
They can lead to deficiency diseases // They can lead to malnutrition

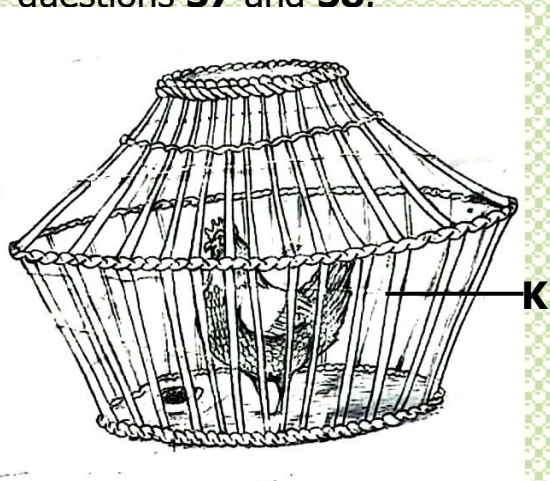
The diagram below shows an object placed Infront of a mirror. Use it to answer question **24** and **25**.



24. What type of mirror is shown in the diagram above?
Plane mirrors
25. Complete the diagram by drawing the image to show its appearance in the mirror. **DONE**
26. State any **one** disadvantage of treating water using chemicals like chlorine.
Chemicals like chlorine add taste and bad smell in water //
do not make water clear // are expensive
27. Apart from brewing alcohol, give any **one** other way in which fermentation is helpful to people. **It helps in production of biogas // It helps in making dairy products // It helps in the making of compost manure**
28. State any **one** way in which hardening off is important in crop growing.
It enables seedlings to adopt/ get used to different weather conditions

29. In which way does a hyena benefit from living in the same environment with a lion?
A hyena feeds on flesh/meat abandoned/left by a lion
30. State any **one** advantage of using hydroelectricity in solving daily problems.
Electricity makes work easy//Electricity is quick and saves time.
It reduces the cutting down of trees for wood fuel.
It does not produce smoke which pollutes air
Electricity produces clean work
31. State any **one** condition that can lead to fainting in an individual.
Prolonged hunger//vigorous physical exercises// shocking news//excessive bleeding//standing in the sunshine for so long//great fear//being frightened
32. Apart from mosses and ferns, name any **one** other plant that reproduces by means of spores.
Liverworts//Horsestails//Hornworts
33. State any **one** natural factor that can lead to low food production in an area.
Crop pests//floods//Prolonged drought//Strong wind// Heavy rainfall// Soil infertility/soil exhaustion//
34. State the difference in functioning between the cortex and medulla in the human kidney.
The cortex filters blood while medulla reabsorbs useful materials
35. State any **one** factor that can make sorted seeds fail to germinate after planting.
Rotten seeds// Immature seeds// Seeds smeared with oil//Overstayed seeds/too old seeds//Damaged seed embryo// lack of necessary conditions. (Reject: hard testa/seed coat)
36. Give any **one** way in which a rain gauge can be made to measure the accurate amount of rainfall received in an area.
Putting the rain gauge in an open flat place/area//raising the part of the rain gauge few metres from the ground.

The diagram below shows the local method of keeping poultry. Use it to answer questions **37** and **38**.

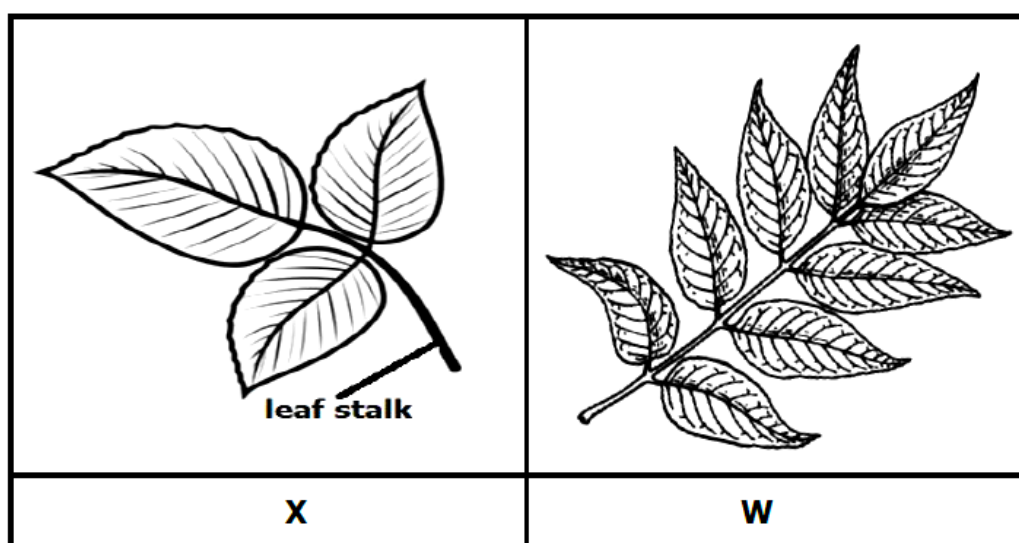


37. Name the system of keeping poultry shown above.
Fold /pen system
38. Mention any **one** way in which the structure marked **K** can be a danger to the birds.
Birds can easily be attacked by dangerous wild animals//
Birds can easily be affected by harsh weather conditions//
Birds lack physical exercises

39. State any **one** reason why you would advise a crop farmer to practice crop rotation. **It improves soil fertility//Controls crop pests and diseases//Controls weed growth**
40. Identify any **one** deficiency disease that requires an individual to feed on a lot of fruits and vegetables.
Night blindness//Scurvy//Anaemia//Beriberi

SECTION B: 60 MARKS

41. Name the childhood immunisable disease that causes;
- (a) Skin rashes: **Measles**
 - (b) Paralysed limbs: **Poliomyelitis/polio**
 - (c) Swollen neck: **Diphtheria**
 - (d) Stiff muscles: **Tetanus**
42. The diagrams below show compound leaves. Study and use them to answer the questions that follow.

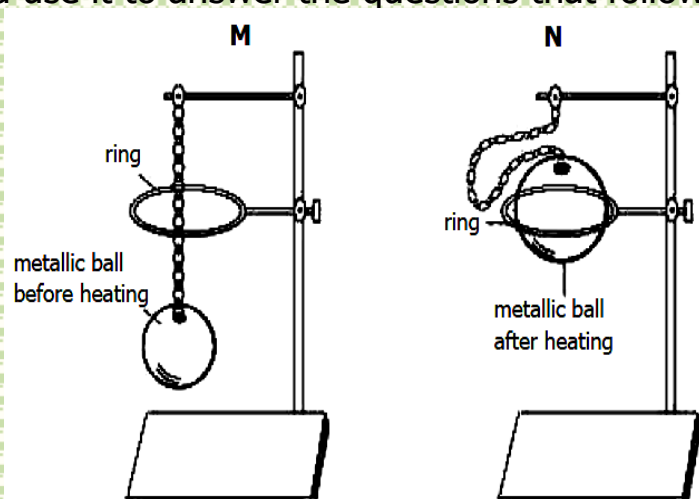


- (a) Name the compound leaves marked **X** and **W**.
- (i) **X** : **trifoliate leaf**
 - (ii) **W** : **pinnate leaf**
- (b) Give any **one** plant that has the compound leaf marked **X**.
Beans//Ground nuts//Peas//Soya beans// Cow peas
- (c) On the compound leaf marked **W**, label the **leaf stalk**.
DONE

43. (a) Apart from a solar drier, give any **one** other device that uses solar energy.
Solar water heater//Solar water pump//Solar cooker
- (b) What is the importance of the black lining inside a solar drier?
To easily absorb sunlight/sunshine
- (b) State any **two** ways in which the use of solar energy helps in the conservation of the environment.
It reduces the rate of deforestation
It does not pollute the environment
44. The table below shows diseases of the respiratory system, causes and signs. Study it carefully and complete it correctly.

Disease	Cause	Sign of the disease
Lung cancer	Smoking	Shortness of breath
Tuberculosis	bacteria	Blood stained sputum
Pneumonia	bacteria/virus	Difficulty in breathing
Flu/influenza	virus	Nasal congestion

45. (a) Name the step used in cleaning clothes that removes;
- Soapy water from clothes: **Rinsing**
 - Excess water from clothes: **Wringing**
- (b) Give any **one** natural resource that is helpful to people when cleaning clothes at home. **Sun//Wind//Water**
- (c) Why is water obtained by distillation not good for drinking?
It lacks mineral salts
46. The diagram below shows an experiment on how heat affects matter. Study and use it to answer the questions that follow.



- (a) Identify the state of matter affected by heat in the experiment above.
Solid state of matter/solids
- (b) Give the reason why the metallic ball failed to pass through the ring in diagram **N**.
Due to expansion caused by heating
- (c) State what should be done in order to make the metallic ball pass through ring in diagram **N**.
Pouring cold water on it to cool// Leaving it to cool
- (d) What does the above experiment show about matter?
Solids/metals expand when heated

47. (a) Name the vector that transmits;
(i) sleeping sickness : **Tsetse fly**
(ii) relapsing fever : **Ticks**
- (b) State any **two** ways in which the spread of sleeping sickness can be controlled. **Clearing bushes around homes//**
Trapping tsetse flies using tsetse fly traps//
Spraying tsetse flies with insecticides

48. The table below shows parts of the human heart in part **A** and their functions in part **B**.

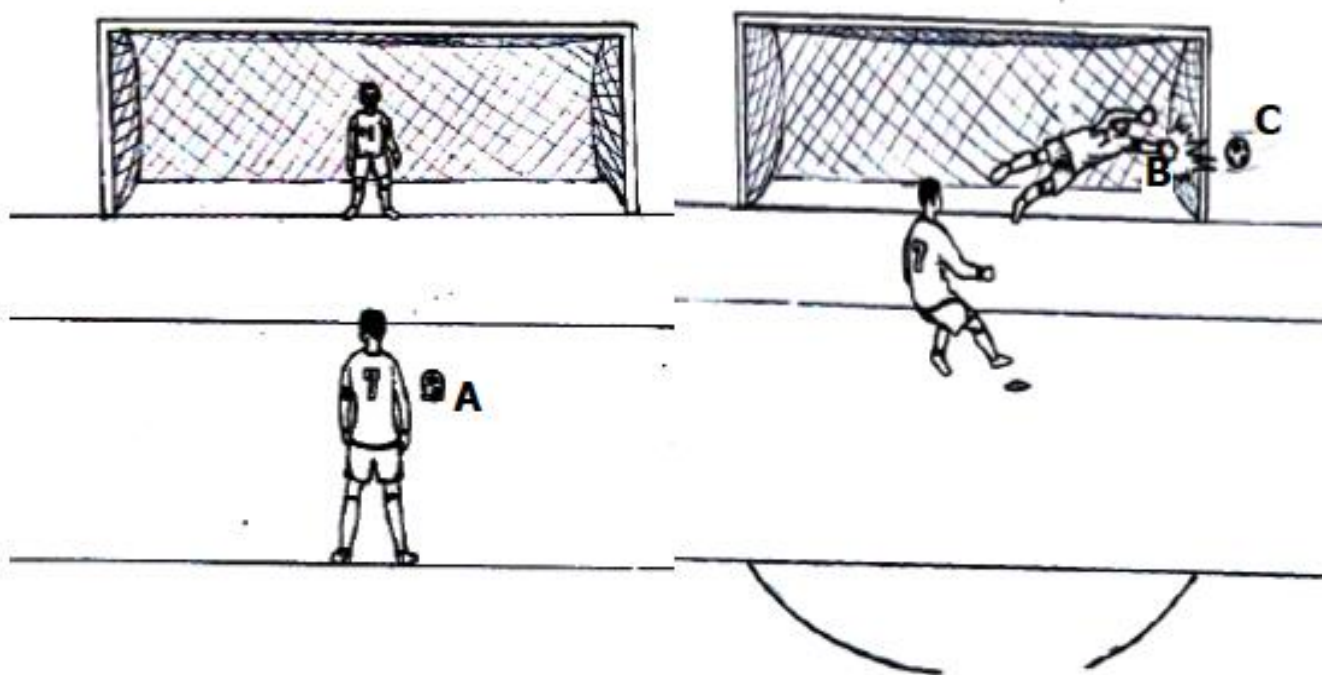
Part A: Parts of the human heart.	Part B: Functions
(i) Pulmonary Artery	Transports oxygenated blood to the heart
(ii) Aorta	Prevents oxygenated and de-oxygenated blood from mixing.
(iii) Septum	Transports de-oxygenated blood to the lungs
(iv) Vena Cava	Transports oxygenated blood to all body parts.

Match correctly the parts of the heart with their functions in the spaces provided below.

- (i) Pulmonary Artery: **Transports de-oxygenated blood to lungs**
- (ii) Aorta : **Transports oxygenated blood to all body parts**
- (iii) Septum : **Prevents oxygenated blood and de-oxygenated blood from mixing**
- (iv) Vena Cava: **Transports de-oxygenated blood to the heart**

49. (a) Write down any **two** organic materials used when making compost manure.
Plant leaves//Banana peelings//Dry grass//Leftover food
- (a) State **one** way in which a farmer can increase decomposition of organic matter when making compost manure.
Pouring/sprinkling water in the compost pit or on the heap
- (b) Apart from compost manure, name any **one** other example of natural fertilisers.
Farmyard manure//Organic mulches//Green manure
50. (a) Write down any **two** services provided to pregnant mothers during ante-natal care.
Guidance and counselling//Testing for HIV/AIDS//Immunization against tetanus
- (b) Give any **two** disorders that affect the human reproductive system.
Ectopic pregnancy//Fibroids//Impotence//Low sperm count//Sterility//Uterine prolapse//Malformed sperms//Deformed penis
51. (a) Give any **two** practices that can harm cattle when grazing them in the field.
Beating cattle//Overstocking//Piercing cattle//Bestiality//Making cattle to fight//Making the rope too tight when tethering the cattle//Improper disposal of polythene bags
- (c) Mention any **one** way in which a newly born calf benefits from colostrum.
It opens the digestive tract of the calf//It boosts immunity of calf//It provides proteins to the calf for proper growth
- (d) State the difference in the way in which a lactometer and a strip cup are used on the farm.
A lactometer determines the amount of fats and water in milk while a strip cup detects the presence of mastitis in milk.

52. The diagrams below show a football player taking a penalty shoot during a football match. The ball possessed the types of mechanical energy. Study them and answer the questions that follow.



- (a) Identify the type of mechanical energy possessed by the ball at Points **A** and **B**.
- (i) **A : Potential energy**
- (ii) **B : Potential energy**
- (b) State the energy change that takes place to the ball at point **B** and point **C**.
Potential energy changes to kinetic energy
- (c) Name any **one** form of energy experienced by the ball at point **C** as the goal keeper receives it.
Sound energy//Heat energy

53. (a) A butcher slaughtered a cow in his abattoir and found tapeworms in the cow's meat. Identify the following from the statement above;
- (i) parasite : **Tapeworms**
- (ii) host : **A cow**
- (b) State any **one** way in which the tapeworm benefited from the cow.
Tapeworms get food from the cow//
Tapeworms get shelter from the cow
- (c) What health condition would people get when they eat the cows meat in the above statement?
Tapeworm infestation

54. (a) Name any **one** method of separating mixtures used to separate paraffin from water.

Use of a separating funnel// Decantation

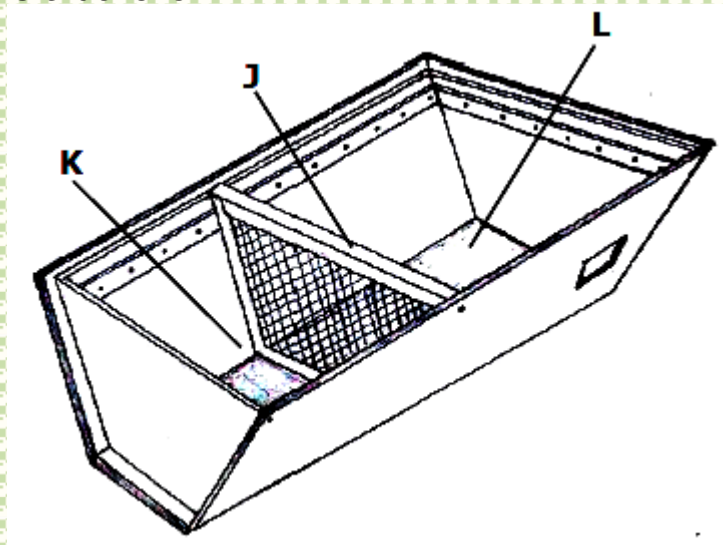
- (b) Sherry wanted to obtain salt from sand, she put the mixture of salt and sand in a container. Write **three** other steps you would advise her to follow in order to obtain salt from sand.

Put water in the mixture of salt and sand and stir the mixture to dissolve salt.

Filter to obtain clean salt solution

Boil the solution to dryness

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



- (a) Identify the modern beehive shown in the diagram above.

Top bar hive

- (b) Name the parts of the modern bee hive above marked **J** and **L**.

(i) **J : Queen excluder**

(ii) **L : Brood chamber**

- (c) State the importance pf the part marked **K** on the modern beehive above.

It is where honey is stored

END

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