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SKIU

INTEGRATED SCIENCE

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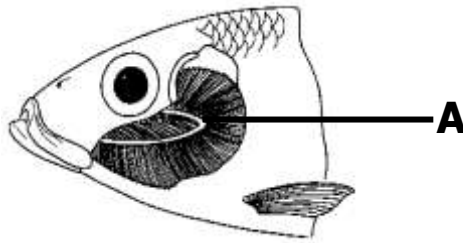
SECTION A

(Question 1 to 40 carries **one** mark each)

1. Give any one characteristic of bean seeds as dicotyledonous seeds

- ✍ Plants have network leaf venation
- ✍ They undergo epigeal germination
- ✍ They have a tap root system.
- ✍ Their seeds have two cotyledons.
- ✍ Their seeds undergo epigeal germination

Use the diagram of a gill of a fish below to answer the questions that follow



2. How is the part marked with letter A important to the fish?

Gill is the respiratory organ for fish

Wrong response

Gill rakers help to trap any foreign body or solid particles

Gill rakers help to trap any foreign body or solid particles that enter with water to avoid damaging the filaments.

✍ **Gill bar/ Gill arch** give the attachment for the gill filaments and gill rakers

✍ **Gill filaments** is where gaseous exchange occurs

Adaptation of gills to gaseous exchange

They have got very many gill filaments which increase the surface area for gaseous exchange

3. Which part of a goat has similar function with the claws in birds?

Horns

Both horns in goats and claws in birds are used for defence

4. Name any one example of organism with hydrostatic skeleton

- ✍ Earthworms
- ✍ Slugs
- ✍ Snails
- ✍ Caterpillars
- ✍ Star Fish
- ✍ Jelly Fish
- ✍ Intestinal worms

This is a type of skeleton where the body of an organism is filled with a liquid under pressure

In this skeleton, there is no hard tissue on the body of an organism.

5. Mention any one cause of improper growth of teeth in children

- ✍ Dental accident
- ✍ Lip biting
- ✍ Mouth breathing
- ✍ Early loss of milk teeth
- ✍ Finger nail biting
- ✍ Sucking fingers

Additional contents to revise

Improper growth of teeth

Improper growth of teeth is when teeth grow in a wrong way.

Signs of improper growth of teeth

- ✍ Missing teeth
- ✍ Teeth growing out of lines
- ✍ When lower teeth are far away from the upper teeth
- ✍ When front upper teeth are too far and cover the lower teeth

Dangers of improper growth of teeth

- ✍ Difficulty in chewing
- ✍ Poor facial appearance
- ✍ Speech problems

6. Mention any one component of the circulatory system

- ✍ The heart
- ✍ The blood
- ✍ Blood vessels

Components of the circulatory system are the features that connect to allow smooth flow of the body fluids.

Use the diagram below to answer questions 7 and 8 correctly.



7. Why do you think the ruler in the glass of water appears bent?

Due to refraction

Refraction is the bending of light as it passes from one transparent medium to another.

The laws of refraction

- ✍ The incident ray and the refracted ray are on opposite side of the normal.
- ✍ The incident ray, the refracted ray and the normal all live in the same plane.

8. Mention any one disadvantage of refraction.

- ✍ Refraction causes drowning and near drowning in swimming pools.
- ✍ Refraction may lead to accidents on the road.

9. State any one reason why we preserve food.

- ✍ For future use
- ✍ To avoid food contamination
- ✍ To promote food sanitation
- ✍ To avoid wastage of food
- ✍ To strengthen food security
- ✍ To add food values to food

10. The diagram below is of a fresh water snail. Use it to answer the questions that follow.



Use letter K to show the tentacles of the invertebrate above.

11. Mention any one elements of sanitation

- ✍ Sanitation involves the following measures:
- ✍ Provision of good housing
- ✍ Proper disposal of human wastes
- ✍ Supply and use of safe water
- ✍ Vector control
- ✍ Safe guarding of food against contamination
- ✍ Prevention of air and water pollution

12. Give any one conditions that cause seed dormancy

- ✍ Attacks from pests and diseases
- ✍ Immaturity of the seed embryo
- ✍ High temperature

- ✍ Hard seed coats
- ✍ Depth of planting
- ✍ Soil moisture contents

13. Write down any one unique qualities of a good first aider

- ✍ He/she should be quick in giving first aid.
- ✍ He/she should be knowledgeable enough
- ✍ He/she should have skills
- ✍ He/she should be clean
- ✍ He should be time saving

14. Why does a blue shirt appear blue?

A blue shirt appears blue because it absorbs all other colours and reflects only blue into our eyes.

- ✍ *A black dress appears black because it absorbs all colours and reflects **none**.*
- ✍ *White objects appear white because they reflect all colours and absorb **none**.*

15. Why are biceps and triceps called antagonistic muscles?

- ✍ They produce opposite movement
 - ✍ They oppose each other's movement
 - ✍ When one relaxes the other contracts
- ✍ *Biceps are called flexor muscles because they cause bending of the arm.*
 ✍ *Triceps are called extensor muscles because they cause straightening of the arm*

16. Give one way how filtered water can be made safe for drinking

- ✍ By boiling
- ✍ By treating using chemicals

Filtered water is not safe for drinking because it may be containing some germs

This is the process of separating solid particles from a liquid.

The solid particles that remain on the filter are called the **residues**

The clean water obtained after filtration is called the **filtrate**.

17. Give any one way of reducing friction n machines.

- ✍ Making rough surfaces smooth.
- ✍ Oiling or greasing (lubrication) of moving parts to make them smooth
- ✍ Using ball bearing.
- ✍ Using rollers.
- ✍ By polishing some surfaces to reduce friction

- ✍ Streamlining the bodies of moving vessels.

18. State any one Sign of a nanny goat on heat

- ✍ It becomes restless (unsettled)
- ✍ The vulva swells and becomes reddish
- ✍ There is whitish mucus discharge from the vulva
- ✍ It mounts other goats.
- ✍ It stands still when it is being mounted
- ✍ Loss of appetite.
- ✍ Constant tail wagging
- ✍ It allows other goats to mount her
- ✍ Increased urination frequency
- ✍ Bleating for no reasons

19. Under which group of non flowering plants does the picture below belong?



Spore producing plants

Other group of non flowering plants

Coniferous plants

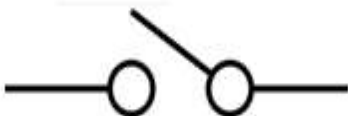
20. Give any one characteristic of renewable resources found in the environment.

- ✍ They can naturally be replaced
- ✍ They can get exhausted
- ✍ They take millions of years to be formed
- ✍ They exist in limited quantity

21. State any one effect of lice on the body of a P7 candidate




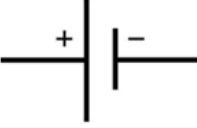
- ✍ The lice suck blood
- ✍ They cause itching, irritation
- ✍ They spread / transmit diseases called typhus fever and relapsing fever.

22. Name the symbol of an electric circuit shown below.



Switch

Other symbols of electric circuit components

			
bulb	ammeter	voltmeter	Dry cells

23. State any one way in which we apply conductors in our daily life.

- ✍ Conductors help us in cooking
- ✍ Conductors help us in wiring electricity
- ✍ Conductors helps us in ironing clothes
- ✍ Conductors are used to make electric circuits.
- ✍ Conductors are used to make electric wires.

24. Use the diagram below to answer the question 17.



25. Name the class of lever to which the simple machine above belongs.

First class lever

First class lever is where the fulcrum lies between the load and effort.

Examples of first class levers

Crow bars, a pair of scissors, a water pump, pliers, a screw driver, a scale balance, see-saw, lid opener, beam balance

26. State any one reason why we should not breathe through mouth.

- ✍ The air will not be warmed so it can chill or make the lungs very cold.
- ✍ The mouth has no cilia to trap dust and germs.

Wrong response

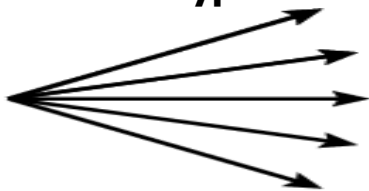
The amount of air breathe through mouth is voluminous

It is expensive. We do not breathe for money

27. Mention any one common cause of food insecurity in our homes.

- ✍ Weather disasters like flood, wind and drought.
- ✍ Pests and diseases
- ✍ Population increase
- ✍ Laziness
- ✍ Ignorance
- ✍ Poor good storage
- ✍ Infertile soils
- ✍ Poor farming methods like mono cropping, over grazing, over cropping
- ✍ Poor preservation of food

28. Name the type of beam of light illustrated below.



Diverging beam of light

This is a beam of light where the light rays from the common source spread out (diverge) away from each other

Objects that produce a diverging beam of light

Car head lamp, bicycle head lamp and torches

29. State any one characteristic of Chemical changes

- ☒ They cannot be reversed (irreversible).
 - ☒ They form new substances.
 - ☒ Energy is either absorbed or given off
 - ☒ There is change in the weight of a substance.
 - ☒ They produce heat
 - ☒ There is change in mass of an object.
- ✓ Chemical changes are changes that cannot be reversed.
- ✓ These are changes which take place and form new substances

Examples of chemical changes

- ☒ Burning wood to ash
- ☒ Decomposition
- ☒ Death
- ☒ Digestion
- ☒ Rusting
- ☒ Fermentation
- ☒ Weathering
- ☒ Boiling of an egg
- ☒ Respiration
- ☒ Photosynthesis
- ☒ Decaying of matter

30. Give any one way of controlling diseases without treatment

- ☒ Through observing proper hygiene of the body and food
- ☒ Always observe proper sanitation
- ☒ Having a balanced diet
- ☒ Ensuring adequate rest and sleep
- ☒ Ensure good posture.
- ☒ Practicing regular body exercises.

31. Write one way of caring for people with special needs in our society.

- ☒ Provide them with medication
- ☒ Provide them with protection

- ✍ Provide them with food
- ✍ Provide them with guidance and counseling
- ✍ Modify their environment
- ✍ Rehabilitate them

32. Give any one way in which soil is formed.

- ✍ By weathering
- ✍ By decomposition of organic matter.
 - Weathering is the physical and chemical breakdown of rocks into small particles to form soil.
 - Decomposition is the rotting of dead organic matter.

33. Which property of air is illustrated in the diagram below?



Air exerts pressure

34. State any one importance of a nursery bed to a farmer

- ✍ It helps in proper selection of good seedlings
- ✍ It gives time to a farmer to prepare the main garden
- ✍ It helps the farmer to care for seedlings

35. Mention any one commonly used example of mulches

- ✍ Dry maize plants
- ✍ Dry leaves
- ✍ Coffee husks
- ✍ Wood shavings
- ✍ Dry banana fibres

*Plant materials used in mulching are called **mulches***

36. How are the rat guards adapted to their function?

Rat guards have slippery surfaces that make rats to slide when entering the granary.

Rat guards are fixed on a granary to prevent rats from entering the granary

37. State one condition necessary for bacteria to multiply.

- ✍ Absence of chemicals that kill them

- ✍ Presence of certain amount of air
- ✍ Optimum temperature
- ✍ Presence of food
- ✍ Presence of moisture

Wrong response: Temperature

Low temperature or high temperature do not favour multiplication of bacteria

The specific answer is **optimum/ medium temperature**

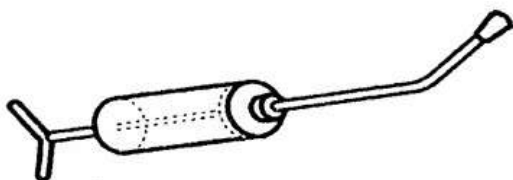
Conditions that do not favour breeding of bacteria

- ✍ High temperature
- ✍ Very low temperature
- ✍ Presence of chemicals

38. Apart from the brightly colored petals, state one other thing that attracts insects to the flowers.

- ✍ Strong scent
- ✍ Presence of nectar

Use the diagram below to answer question 39.



39. Give the use of a farm equipment above to cattle farmer.

A drenching gun is used to administer liquid drugs to cattle

Wrong response:

A drenching gun is used to administer drugs to animals

40. State one reason why farmer stake tomato plants.

- To prevent tomatoes from rotting, To make weeding easy

Section B

(Question 41 to 55 carries 4 marks each)

41. Observe the diagram of a bird below carefully and use it to answer the questions that follow



a) State one characteristic of the above category of vertebrates.

- ✍ They are warm blooded.
- ✍ Their legs are covered with scales.
- ✍ They reproduce by laying eggs.
- ✍ They undergo internal fertilization.
- ✍ They respire by means of lungs.
- ✍ They have streamlined bodies
- ✍ Their bodies are covered with feathers.
- ✍ They take care of their young ones

b) Give any two adaptations of the vertebrates to fly.

- ✍ They have hollow bones which help to reduce their weight during flight.
- ✍ They have got streamlined bodies which help to reduce viscosity friction during flight.
- ✍ Their forelimbs are modified into wings for flying.
- ✍ They have got wings for flapping air during flight.
- ✍ Their eyes are protected against strong blowing wind by a tough membrane called **nictitating membrane**.
- ✍ They have got strong breast muscles which enable them easily flap their wings.
- ✍ They have no pinna to obstruct the flow of wind during flight.
- ✍ They have got small heads and long necks which make them easily turn quickly.
- ✍ Their bodies are covered with flight feathers which is an insulator of heat
- ✍ They have got hollow air sac starting from the lungs which makes respiration effective during flight.

c) State any one disadvantages of birds in the environment

- ✍ Some birds are pests (They spoil farmer's crops)
- ✍ Some birds cause noise pollution in the environment.
- ✍ Some birds kill and eat poultry.
- ✍ Some birds keep vectors like mites
- ✍ Some birds cause accidents on run ways of aeroplanes
- ✍ Some birds are birds of prey and predators to poultry

42. (a) Name the type of cloud which:

- (i) **appears the farthest in the sky:** Cirrus cloud
- (ii) **brings us rain:** Nimbus cloud

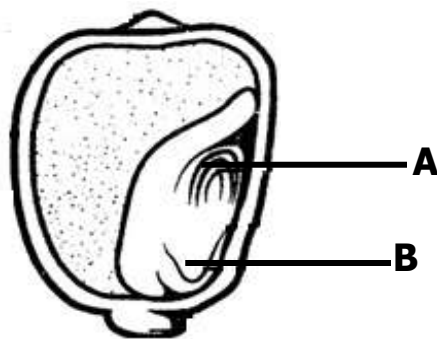
(b) Mention any one importance of clouds in the environment

- ✍ Clouds bring rain
- ✍ Clouds protect people and animal from direct sunlight
- ✍ Cloud lowers the temperature of the environment

(c) Give any one effect of clouds on the environment

- ✍ Clouds reduce the brightness in our environment.
- ✍ Clouds causes plane crash
- ✍ Clouds cause thunderstorms

43. Below is a diagram of maize grain. Use it to answer the question that follow.



(a) Why is maize considered to be fruit not seed?

Maize grain has two scars instead of one.

(b) Name the part marked with letter A and B.

(i) A: Plumule

(ii) B: Radicle

(c) Name the part of a maize grain which stores food for the embryo

Endosperm

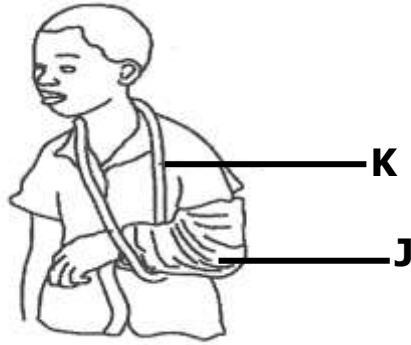
44. (a) State any two advantages of using hand washing in cleaning clothes.

- ✍ It is cheap
- ✍ It promotes physical exercises
- ✍ It is environmentally friendly
- ✍ It saves the fabrics against machine damage
- ✍ Dirt and stains are eliminated completely
- ✍ It uses less water and detergents
- ✍ It helps to maximize proper hand hygiene

(b) Give any two disadvantages of using hand washing

- ✍ It takes a lot of time
- ✍ It needs a lot of effort and energy
- ✍ It fades the fabrics quickly
- ✍ Some detergents used in washing cause skin infection

45. The diagram below shows a person with an injury. Use it to answer question 3



(a) Name the first aid component marked with letter M and J above.

(i) **M:** Arm sling

(ii) **J:** Splint

(b) How useful is the structure marked M and J to the injured person?

(i) **M:** M is tied around the neck to support the broken arm.

(ii) **J:** J keeps the broken bones in their correct position

Additional revision content

Other items used in giving first aid for fractures

✍ A stretcher is used to carry casualties to the hospital

✍ The crutches support the broken bones

Splints are used for giving first aids for fracture because:

✍ To keep the broken bones in one position

✍ To immobilize the broken bones

46.(a) State any two examples of primary sex characteristics in boys.

✍ The penis increases in size.

✍ The testes start producing sperms

✍ Wet dreams start.

(b) Give any two examples of primary sex characteristics in girls

✍ The uterus and the ovaries develop

✍ Production of ova begins (Ovulation).

✍ Menstruation period begins.

47. (a) Name the set of teeth which appears first in babies after the age of 6 months

Milk teeth (Deciduous teeth) / primary set of teeth

Other set of teeth include

Permanent teeth / secondary set

(b) Name the type of teeth not found in the set of teeth above.

Molar teeth

(c) **State any two uses of teeth in the process of digestion.**

- ✍ For tearing food
- ✍ For grinding food
- ✍ For biting food

48. (a) What is a stem?

A stem is a slender part of a plant that grows from the plumule.

(b) **Give any two uses of a stem to a plant**

- ✍ It transports water and mineral salts from the roots to the leaves.
- ✍ A stem transports food from the leaves to other parts of the plant.
- ✍ A stem supports the leaves and branches of a plant.
- ✍ Some stems are used for breathing.
- ✍ Some stems are used for propagation e.g. cassava and sugar cane.
- ✍ Some stems store food for the plants e.g. Irish potatoes, sugar cane.

(c) **Mention any two uses of stems to people**

- ✍ Some stems are eaten. E.g. sugarcane and Irish potatoes
- ✍ Some stems are used for firewood.
- ✍ For herbal medicine.
- ✍ For making timber.
- ✍ For building houses

49.(a) What are good eating habits?

Good eating habits refer to the acceptable acts before, during and after eating food.

(b) **Mention one example of good eating habit observed by a P7 child.**

- ✍ Washing hands before eating food.
- ✍ Sitting upright when eating food.
- ✍ Swallowing food after chewing it properly.
- ✍ Chewing food with mouth closed.
- ✍ Putting small lumps of food in the mouth at a time.

(c) **Importance of good eating habits**

- ✍ Chewing food well prevents food choking
- ✍ Washing hands before eating prevents us from eating germs
- ✍ They avoid constipation
- ✍ Chewing food well prevents indigestion
- ✍ Sitting upright while eating food facilitates movement of food in the alimentary canal.

50.(a) How do the earthworms move?

Earthworms move by contraction of their body muscles.

Wrong response

- ☒ By sliding/ crawling

(b) Give any one importance of earthworms in the soil.

- ☒ Earth worms help in aeration of soil
- ☒ They decompose organic matters
- ☒ Earth worms also soften the soil.
- ☒ Their excreta help in the formation of humus

(d) Why do earthworms die when oil is poured on to its body?

The oil will block the oxygen supply onto the moist skin.

(e) How is clitellum important to the earthworms?

Clitellum secretes a viscid sac in which the eggs are deposited

Clitellum is the thick layer of swollen granular portion of the body that is not segmented as the rest of the body

Additional revision content

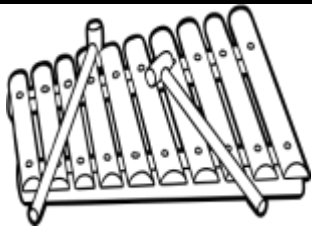


- ☒ Earthworms reproduce by laying eggs
- ☒ An earthworm is a hermaphrodite (have both female and male) reproductive organs.

Hermaphrodites are animals with both male and female reproductive organs.

Other examples of hermaphrodites are:

- ☒ tape worms
- ☒ snails

51. Below are the diagrams of musical instrument. Use it to answer the questions that follow.

Instrument A	Instrument B	Instrument C
		

(a) Name the musical instrument represented by letter A.

Xylophone

(Consider the correct spellings of the word xylophone)

(b) How does instrument marked with letter B produce sound?

Through vibration of the skins

Wrong response

Through beating/ hitting them

Sound is produced as a result of vibration of an object such as skins, woods and metals

- *Vibration is the rapid to and from movement of an object*
- *Vibration is the up and down movement of an object rapidly*

(c) State any one reason why sound produced by the drum cannot travel through the vacuum.

Sound doesn't travel through a vacuum because it does not have molecules /air/matter

- A vacuum is space without matter.
- **Sound travels fastest in solids, faster in liquids and fast in gases.**

(d) Under what class of musical instrument does it belong?

✍ Percussion instrument

Other classes of musical instruments are:

- ✍ String musical instruments (chordophones)
- ✍ Wind musical instruments (aero phones)

52. (a) State any two diseases caused due to smoking

- ✍ Lung cancer
- ✍ Cancer of the mouth and the throat
- ✍ Emphysema
- ✍ Bronchitis

Wrong responses

- ✍ Stomach ulcers
- ✍ Pneumonia
- ✍ Whooping cough
- ✍ Tuberculosis

Reasons:

These diseases are worsened by smoking but not caused by smoking

(b) Name any one body organ destroyed by smoking

Lung

Heart

Wrong responses

- ✍ Throats
- ✍ Mouth
- ✍ Gullet
- ✍ Stomach walls

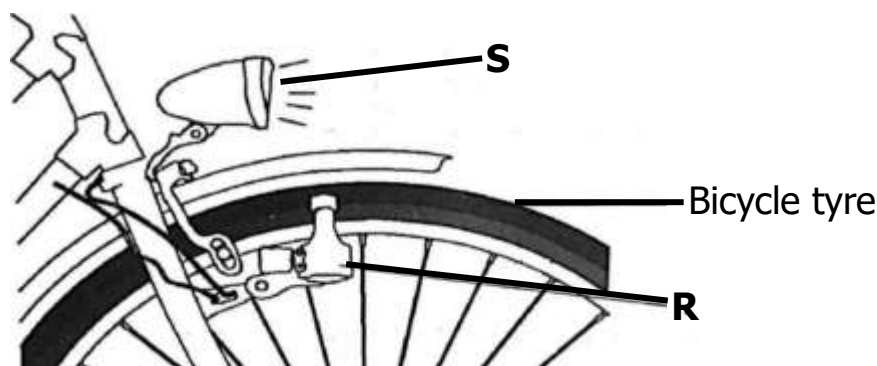
Reasons:

*These are body parts affected by smoking not **body organs***

(c) Give any one reason why people smoke tobacco

- ✍ Some smoke to concentrate on their work.
- ✍ Some smoke to look sophisticated /important.
- ✍ Some smoke to warm their bodies.
- ✍ Some smoke due to peer pressure.
- ✍ Some smoke to feel confident
- ✍ To appear different from others
- ✍ To fit in the groups
- ✍ To pass time
- ✍ To fit in the groups

53. The diagram below shows equipment on a bicycle that is used to produce electricity. Study and use it to answer the questions that follow.



(a) Name the equipment represented with letter S.

Head lamp

Wrong response: torch/ bulbs/ bicycle light

(b) State one factor determining the output of the equipment R

- ✍ Number of coils inside it
- ✍ Speed of rotation
- ✍ Strength of magnet inside it

(c) Give the work of an equipment R found in:

- (i) **Vehicles:** They help in charging the car batteries.
- (ii) **Bicycles:** They help to produce light at night

Additional revision content

*A dynamo is a machine which converts kinetic energy into electrical energy.
A dynamo produces electricity by converting mechanical energy in the form of kinetic energy into electric energy.*

54. (a) What are bio- luminescent objects?

Bio- luminescent objects are living things that produce light

They have live in them and have ability to produce light at night.

(b) Mention one example of living things which produce light at night

- ✍ Fire flies
- ✍ Glow worms
- ✍ Jelly fish
- ✍ Dragon fish
- ✍ Some squids

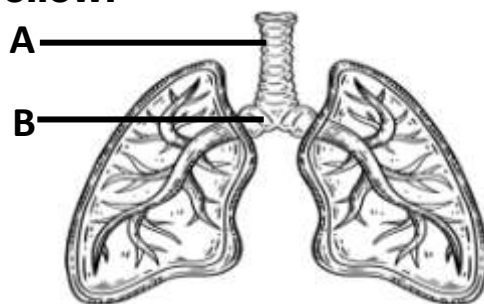
(c) State any one similarity between light and sound

- ✍ Both can be reflected.
- ✍ Both are forms of energy.

(d) Give any one difference between light and sound energy

- ✍ Light energy does not require a medium of transmission while sound energy requires a medium of transmission.
- ✍ Light can travel through a vacuum while sound cannot travel through a vacuum.

55. Below is a diagram of an excretory organ. Use it to answer the questions that follow.



(a) Name the part marked with letter B.

Bronchus

(b) Why are part marked with letter A made out of cartilage rings?

Part marked with letter A is made up of cartilage rings to keep it open all the time

(c) State any one reason why the above illustrated organ is regarded as:

(i) Excretory organ:

They excrete carbon dioxide (by-product of respiration) from the body

(ii) Respiratory organ

They are used in respiration

Additional revision content

Non infectious disease of the lungs

Asthma, pleurisy, pneumonia, whooping cough and diphtheria

Game over