

THE E-LEARN EXAMINATIONS BOARD

PRE NATIONAL MOCK 2024

SET TWO / FOUR

INTEGRATED SCIENCE GUIDE

Time Allowed: 2 hours 15 minutes



Index No.	EMIS No.					Personal No.		

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Read the following instructions carefully:

1. Do not forget to write your **school** or **district name** on the paper.
2. This paper has two sections: **A** and **B**.
Section **A** has **40** questions and section **B** has **15** questions. The paper has **10** printed pages altogether.
3. Answer **all** questions. **All** working for both sections **A** and **B** must be shown in the spaces provided.
4. **All** answers **must** be written using a **blue** or **black** ball point pen or ink. Any work written in pencil will **not** be marked.
5. Unnecessary **changes** in your work and handwriting that cannot be read easily may lead to **loss of marks**.
6. Do not fill anything in the table indicated: **"For Examiners' use only"** and boxes inside the question paper.

FOR EXAMINERS' USE ONLY		
Qn. No.	MARKS	EXR'S NO.
1 – 10		
11 – 20		
21 – 30		
31 – 40		
41 – 43		
44 – 46		
47 – 49		
50 – 52		
53 – 55		
TOTAL		

SECTION A: 40 MARKS

Questions **1** to **40** carry **one** mark each.

1. Write any **one** domestic animal that keeps security.

✓ **Dog**

2. What is electricity?

✓ **Electricity is the form of energy produced by charges.**

3. Name the type of venation possessed by banana leaves.

✓ **Parallel venation**

4. Give **one** importance of white egrets to a cattle farmer.

✓ **They help to control ticks.**

5. When is a P.7 girl said to be vulnerable?

✓ **When a girl is sick**

6. What is soil profile?

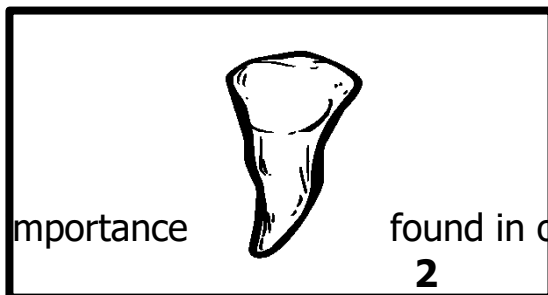
✓ **Soil profile is the vertical arrangement of soil layers.**

✓ **Soil profile is the arrangement of soil layers from top to bottom**

7. State, the importance of a dump proof coarse found on a living house.

✓ **It prevents sipping of water by capillary action.**

8. In the space below, draw a tooth characterized by being sharp and flat.



9. Give the importance  found in organisms with hydrostatic skeleton.

✓ **It gives them shape // It helps them to move**

10. Mention, **one** protozoan disease that attacks poultry, apart from coccidiosis.

✓ **Black head**

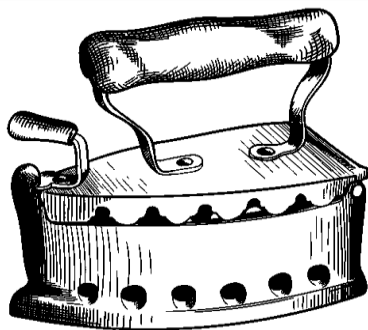
11. Name the characteristic of insect pollinated flowers, that enables them to be pollinated at night.

✓ **They produce scent at night.**

12. How can a school health committee tell whether the child was immunized against measles without referring to the child health card?

✓ **By checking the scar on the left upper arm**

The diagram below, shows an iron box. Use it to respond to question 13 and 14.



13. Give **one** material from which part F can be made from.

✓ **Plastic //rubber //Wood**

14. Identify the part of headteacher's offices that works in a similar way to part Z

✓ **Ventilators// louvers**

15. What is the basic unit for measuring length?

✓ **Centimeter**

16. Which sexually transmitted disease causes blindness in newly born babies?

✓ **Gonorrhea**

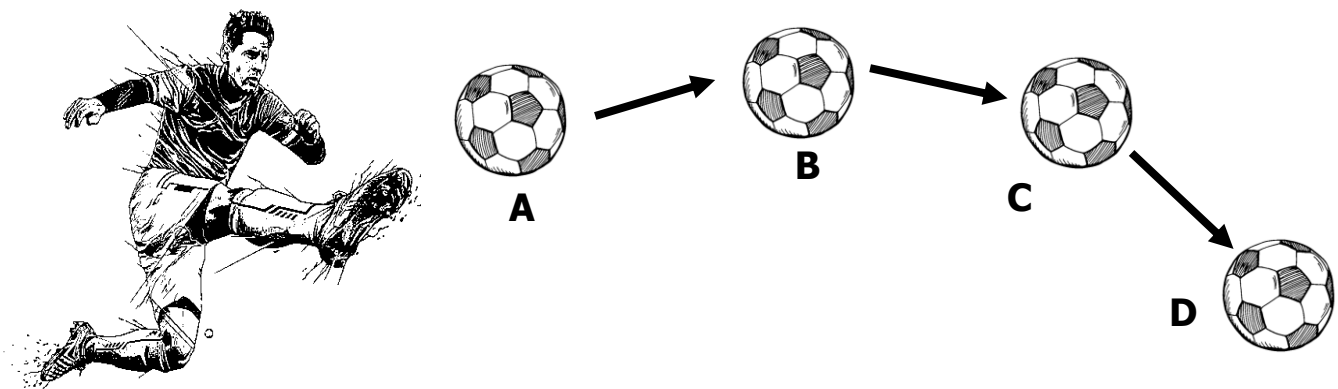
17. Which type of change maintains the properties of the original substance?

✓ **Physical change**

18. Give **one** sign of a simple fracture.

✓ **Swelling of the fractured part. *Reject:* Pain around the injured part.**

Messi kicked the ball as shown below. Use it to answer question 19 and 20



19. Name the type of energy possessed by the ball at position B.

✓ **Kinetic energy**

20. Give a reason to support your answer.

✓ **The ball is in motion.**

21. Which animal product is a raw material in tannery?

✓ **Skins and hides**

22. In which condition of the body is tepid sponging recommended to an individual?

✓ **fever**

23. Name the vector that spreads the disease that has been immunised in Uganda of recent.

✓ **Tiger/aedes mosquito**

24. To which class of levers does a fishing rod belong?

✓ **Third class of lever**

25. Which layer of the skin contains the pigment that is affected by bleaching using chemicals?

✓ **Malpighian layer**

26. Give a reason why mechanical advantage of any machine has no units.

✓ **It is a ratio of two forces expressed in the same units.**

27. Convert 30°C to degrees Fahrenheit.

$$9C + 160^{\circ} = 5F$$

$$(9 \times 30^{\circ}) + 160^{\circ} = 5F$$

$$270^{\circ} + 160^{\circ} = 5F$$

$$450^{\circ} = 5F$$

$$\frac{450^{86^{\circ}}}{5} = \frac{5F}{5}$$

$$86^{\circ} = F$$

$$\underline{30^{\circ}C = 86^{\circ}F}$$

28. How is pulmonary artery similar to veins?

✓ **Both carry deoxygenated blood**

29. Why does a person become cold immediately after dying?

✓ **Respiration stops which provides heat**

30. Name the weapon used by bees and wasps to defend themselves from any attack.

✓ **Stinger**

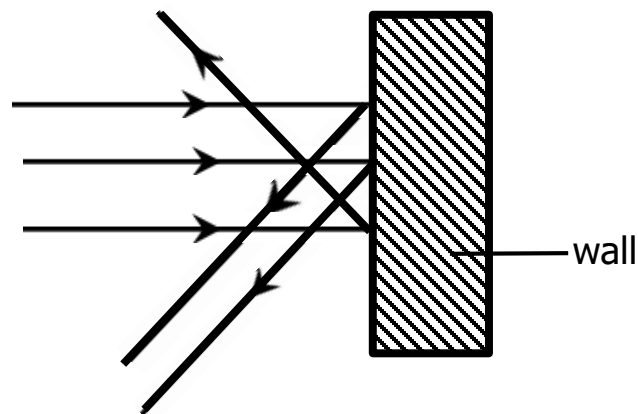
31. Katongole was given a paracetamol tablets in a packet written on 2×3.
How often does Katongale take the tablets?

✓ **3 times a day**

32. Write the groups of simple machines compared to the incisor teeth in humans

✓ **Wedges**

33. Complete the diagram to show the effect of light on the object below



34. Give the effect of sickle cell anemia on a red blood cell.

✓ **Sickle cell anaemia changes the shape of a red blood cell to appear like that of a sickle.**

35. Having wings is an adaptation of birds to fly. Why is it that that adaptation is not favouring birds like emu and ostrich?

✓ **They have weak and small wings compared to their body sizes**

36. To, which group of arthropods do millipedes and centipedes belong?

✓ **Myriapods**

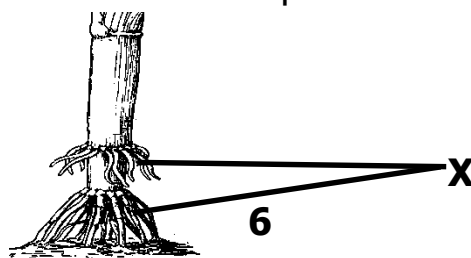
37. What does letter **I** stand for in **PIASCY**?

✓ **Initiative**

38. Why does a leaf float on water and a stone sink?

✓ **A stone is denser than a leaf// A leaf is less dense than a stone leaf.**

The diagram below shows roots of a certain plant. Use it to answer question 39.



39. When do the above roots develop on a plant?

✓ **During flowering/fruiting**

40. (a) Mention **one** use of electricity.

✓ **It is used for ironing clothes**

✓ **It is used for cooking**

SECTION B: 60 MARKS

Questions **41** to **55** carry four marks each.

41. (b) Give **one** reason why transplanting is done in the evening.

✓ **To prevent wilting of seedlings.**

(c) Why is a trowel a suitable garden tool for transplanting seedlings from a nursery bed?

✓ **A trowel prevents damage of roots**

(c) What is "hardening off" in crop growing?

✓ **Hardening off is the removal of shades from a nursery bed to enable seedlings get used to garden conditions**

(d) Why is hardening off an important crop growing practice?

✓ **It prevents seedlings from wilting after transplanting.**

✓ **It enables seedlings to get used to garden conditions.**

42. (a) What are poultry vices?

✓ **Poultry vices are bad habits among poultry.**

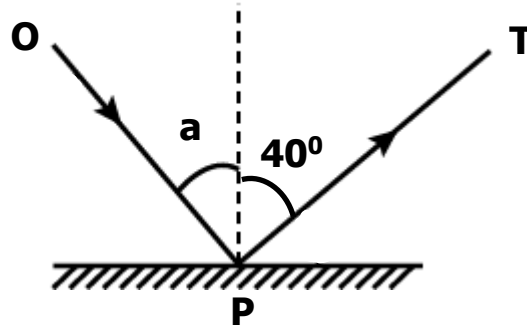
(b) Give **two** examples of poultry vices.

✓ **feather pecking, egg eating, toe pecking, cannibalism**

(c) How does debeaking help to control poultry vices?

✓ **By making the beaks of birds blunt.**

43. The diagram below is of a plane mirror, Use it to answer questions that follow



- a) Name the ray marked **OP**.

✓ **Incident ray**

- b) Find the value of a

< of incidence = < of reflection

$$\mathbf{a = 40^{\circ}}$$

- c) Give **two** characteristics of images formed by plane mirrors.

✓ **They are laterally inverted // They are upright.**

✓ **They are equal to the object in size.**

✓ **The image distance is equal to object distance from the plane mirror.**

44. The steps below show how to harvest **honey**, but they are in wrong order.
Use them to form a correct order

- cut the **honey** combs
- puff smoke into the hive
- open the hive
- lower the hive

Correct order

a. lower the hive.

b. open the hive.

c. puff smoke into the hive.

d. cut the honey combs.

45. Mention the harmful wastes removed by the following organs from the body.

- a) Lungs

✓ **carbon dioxide**

b) Kidneys

✓ **Urea, Uric acid, Excess water, Excess salts**

c) Skin

✓ **Sweat, Lactic acid**

d) Liver

✓ **Bile pigment.**

46. The table below is of invertebrates. Use it to answer questions that follow.

Group A	Group B	Group C
Spiders	Housefly	Crabs
Tick	Cockroach	Lobster
Scorpions	tsetse fly	Sand hopper

a) How are the above invertebrates similar?

✓ **They are all arthropods.**

✓ **They have segmented bodies and jointed legs.**

b) Which of the above Invertebrates is viviparous?

✓ **tsetse fly// scorpion**

c) In which way is the breathing of a spider different from that of a crab?

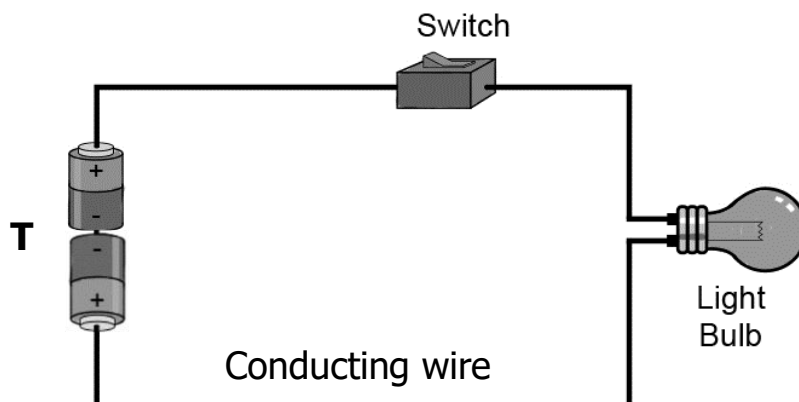
✓ **A spider uses book lungs to breath while a crab uses spiracles**

d) Why are organisms in group B regarded as vectors?

✓ **They spread diseases**

✓ **They spread germs**

47. Nakyanzi arranged the following components of a simple circuit as follows



a) Name component T.

✓ **Dry cell**

b) Give a reason why the bulb did not light.

✓ **There is poor arrangement of dry cells**

For electrons to flow, a negative terminal must be connected to the positive terminal if you are using more than one dry cell.

c) What, advice can you give to Nakyanzi so that the bulb gives light?

✓ **To connect a negative terminal to a positive terminal.**

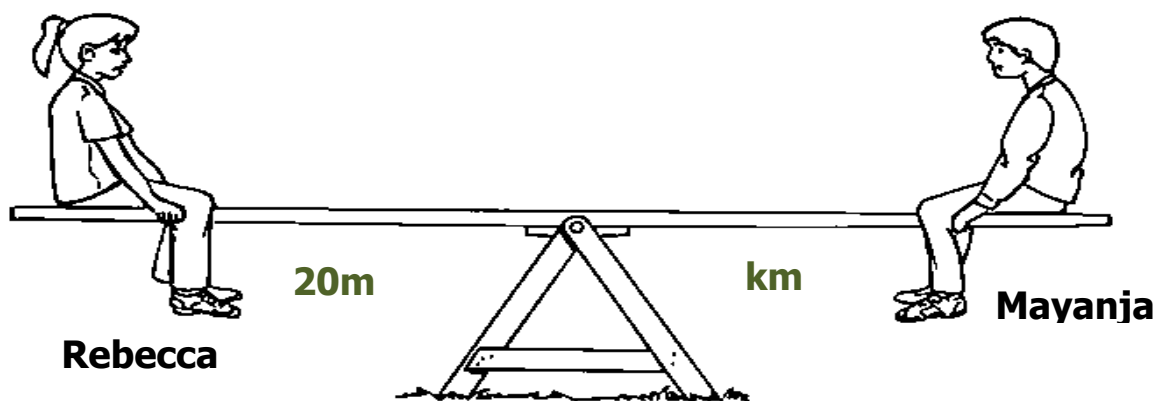
d) How does coiling of the filament affect resistance in the bulb?

✓ **By increasing the length of a wire.**

✓ **By increasing the number of coils of the filament in a bulb.**

48. Rebecca weighing 50N sits 20m from the pivot of a seesaw. How far from the fulcrum should Mayanja whose weight is 40N sit in order to balance with Rebecca?

Sketch carries a mark



Clockwise movement = anticlockwise movement

$$50\text{N} \times 20\text{m} = \text{km} \times 40\text{N}$$

$$1000\text{Nm} = 40\text{kmN}$$

$$\frac{1000\text{Nm}}{40\text{mN}} = \frac{40\text{kmN}}{40\text{mN}}$$

$$25 = \text{K}$$

Mayanja has to sit 25m from the fulcrum

$$\frac{\text{effort}}{\text{Load}} = \frac{\text{load}}{\text{effort}}$$

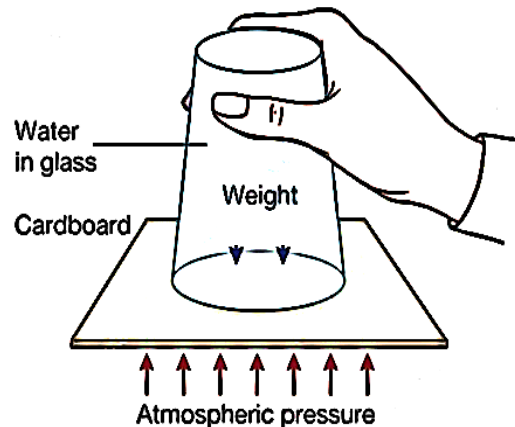
$$\frac{40\text{N}}{50\text{N}} = \frac{20\text{m}}{(k)\text{m}}$$

$$40\text{kNm} = 50\text{N} \times 20\text{m}$$

$$\frac{40\text{kNm}}{40\text{Nm}} = \frac{1000^{25}\text{Nm}}{40\text{Nm}}$$

$$\underline{\underline{K = 25}}$$

49. The diagram below shows a property of air use it to answer questions that follow.



- a) Name the property of air illustrated above.

✓ **Air exerts pressure**

- b) Why didn't the cardboard fall off?

✓ **The air pressure inside is equal to air pressure outside.**

- c) How useful is the above property to:

- i) crop farmers

✓ **It is used for spraying crops using a knapsack sprayer.**

- ii) Health workers

✓ **It is used to suck medicine from the bottle using a syringe.**

50. (a) What is the difference between kindling and Kidding?

✓ **Kindling is the act of giving birth in rabbits while kidding is the act of giving birth in goats.**

- (b) Name the animal whose gestation period is 114 days.

✓ **Sow**

(e) Give the meaning of the terms below.

i) Flushing

✓ **This is the providing of extra nutritious feeds to ewe before mating.**

ii) Steaming up

✓ **This is the feeding of a pregnant animal on foods rich in proteins.**

51. Match items in list **A** with those in list **B** correctly.

A

Use of corms

Use of Bulbs

Use of rhizomes

Use of leaves

B

bryophyllum

canna lily

gladiolus

shallot

Correct order

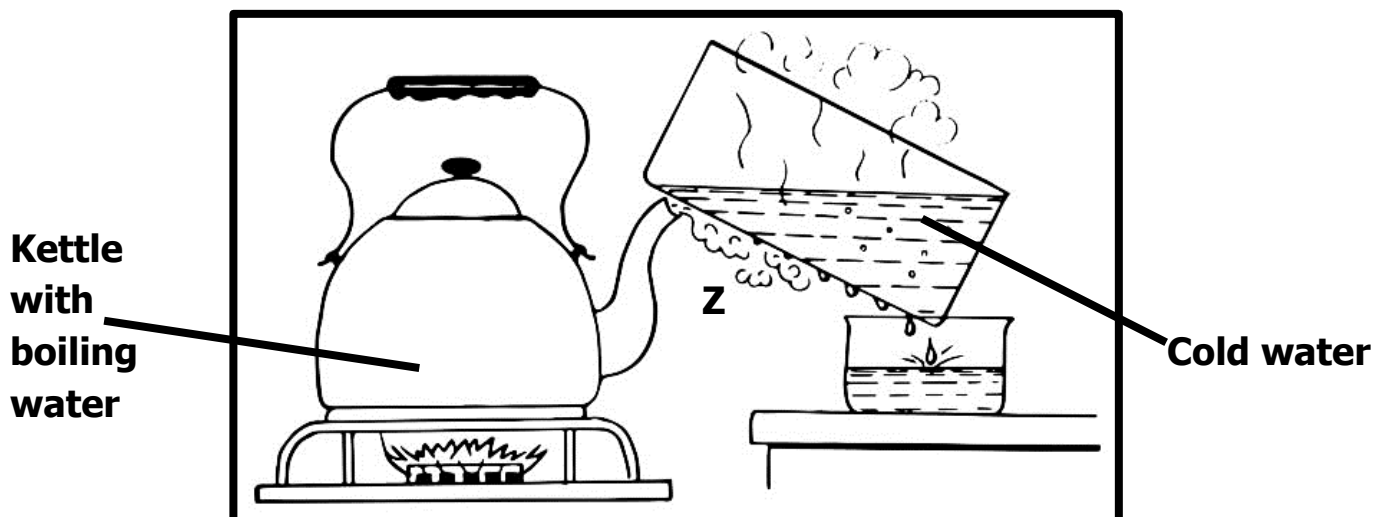
Use of corms: gladiolus

Use of bulbs: shallot

Use of rhizomes: canna lily

Use of leaves: bryophyllum

52. The experiment below was carried out by Magoola Racheal a P.4 pupil at Gombe Standard, P/S. Study it and use it to answer questions that follow.



a) Name the natural process in the environment that is shown in the above experiment

✓ **water cycle/ rain formation**

b) Name the physical process taking place at **Z**.

✓ **evaporation**

c) Give a reason why it is better to use a clay charcoal stove instead of a metallic one.

✓ **It keeps heat for a long time.**

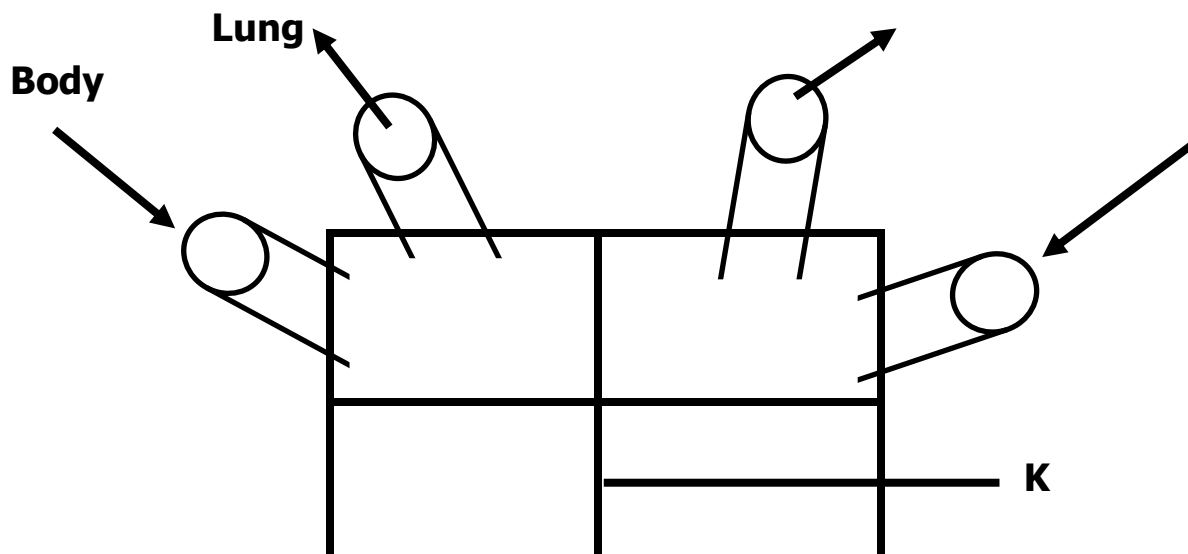
d) What is the importance of cold water in the bowl?

✓ **It helps to condense the vapour (steam).**

53. Study the table below and complete it correctly.

VECTOR	DISEASE	CAUSE
Housefly	Trachoma	Chlamydia
Female Anopheles mosquito	Malaria	Plasmodium
Tsetse fly	Sleeping sickness	Trypanosoma
Cockroach	Typhoid	Salmonella typhi

54. The diagram below shows a model of a certain body organ. Use it to answer questions that follow.



a) To which body system does the above organ belong?

✓ **Circulatory system**

b) Name the blood vessel marked B.

✓ **vena cava**

c) Give the importance of part marked K.

✓ **It prevents deoxygenated blood from mixing with oxygenated blood**

d) Mention **one** activity that keep the above organ in proper working conditions.

✓ **Doing regular physical body exercise**

✓ **Feeding on a balanced diet**

55. (a) What is sound?

✓ **Sound is the form of energy that stimulates the sense of hearing**

✓ **Sound is the form of energy that enables us to hear.**

(b) Name the part of the ear that is useful to a deaf.

✓ **Semi circular canal**

(f) Give a reason why the above part is useful to the deaf.

✓ **It is used for body balance.**

(g) Apart from the reason given above, mention the other function of the ear to other organism.

✓ **For hearing**

END