

UNEB PRIMARY LEAVING EXAMINATION 2023

INTEGRATED SCIENCE QUESTIONS WITH ANSWERS

(ANSWERS GIVEN HAVE REFERENCES TO JUST ONE BIOLOGY TEXTBOOK- Comprehensive Introduction to Biology aka CIB TEXTBOOKS)

SECTION A

1. Name the type of teeth which develops last in human beings.

C I B S.2 page 39 (*Molar teeth* are not included because they only exist when one approaches adult age. So the dental formula for baby teeth will be represented as $di \frac{2}{2} : dc \frac{1}{1} : dp \frac{2}{2}$.) **C I B S.2 page 33** (The completion of their eruption is usually delayed until the individual reaches near adult age.)

2. Give any one way in which timely weeding of crops helps to control crop diseases.

C I B S.4 page 114 (*Farmers must select plants with no symptom of the disease and use as planting materials.* Remove diseased plants showing symptoms of the disease and destroy them. **C I B S.4 page 115** (*Consider removing infected plants at the seedling stage.* Control weeds in and around fields. Promptly remove and destroy old tomato plants and other host crops after harvest. Control weeds and volunteer plants in fallow fields, non-cropped, or idle land near next year's tomato field (garden).)

3. Give one element of weather which helps plants to make their own food.

C I B S.2 page 3 (The raw materials of photosynthesis are *carbon dioxide* and water. Carbon dioxide is the only form in which plants take up carbon even though some aquatic plants may obtain it from hydrogen carbonate ions (HCO_3^-) dissolved in water.). **C I B S.2 page 9** (*As plants carry out the process of photosynthesis, factors such as light intensity, carbon dioxide concentration, temperature, water and chlorophyll determine the rate at which it proceeds.*).

4. State the purpose of pressing the belly of a casualty of near drowning.

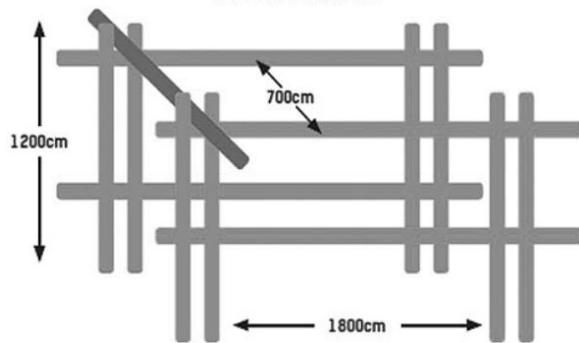
C I B S.2 page 282 (Artificial respiration is defined as the *breathing induced* by some manipulative technique when natural respiration has stopped or is faltering. Such techniques, if applied quickly and properly, can prevent some deaths from drowning, choking, strangulation, suffocation, carbon monoxide poisoning, and electric shock.).

C I B S.2 page 283 (The palm on contact with the chest of the patient should be the basis and to be as much as possible unbent. Pressing into the heart is done with straight arms, elbows do not bend as illustrated on the top right of this page. The pressure should be all weight, not just hands.). **UNEB PLE INTEGRATED SCIENCE, it's not the belly pressed for near drowning but rather for chocking in adults during the Heimlich maneuver as a first aid (C I B S.1 page 176).**

5. Give any one reason why fish are able to live in water.

C I B S.2 page 257 (All fishes live in water bodies and so they have the capacity to remove oxygen in the water and release carbon dioxide from their body into the water.)

The diagram below shows a structure in a cattle farm. Study and use it to answer questions 6 and 7.



6. Mention any one farm activity carried out in the above structure.

Pass to Agriculture under farm structures (dehorning, castrating, deworming, vaccination etc.)

7. How is the above structure useful when carrying out the farm activity you have mentioned above?

Pass to Agriculture under farm structures (restrains the cattle being castrated so as to avoid injuring the vet doctor)

8. Name the excretory organ that removes water and carbon dioxide from the human body.

C I B S.2 page 262 (Air and moisture then flows out of the lungs to outside of the body through the nose or mouth.)

9. Mention any one similarity between fungi and animals in the way they feed.

C I B S.1 page 43 (They have both parasitic and heterotrophic mode of nutrition.). **C I B S.1 page 49** (Animals have heterotrophic mode of nutrition.)

10. State one way in which the screen on the pipe of a VIP latrine helps to control diarrhoeal diseases.

C I B S.1 page 151 (Keep doors, windows and vents closed as much as you can, and put screening materials and sealing around fly entry points.)

11. State any one piece of advice you can give to children to help them prevent indigestion.

C I B S.2 page 49 (Avoid foods that trigger indigestion. Eat five or six small meals a day instead of three large meals.)

12. State any one way in which you can safeguard yourself against smoking.

C I B S.4 page 38 (Nicotine in cigarettes is addictive, which is why people experience unpleasant withdrawal symptoms when they try to quit. Nicotine replacement therapy (NRT) provides a low level of nicotine without the other poisonous chemicals in tobacco smoke. This helps to ease some of the

symptoms of nicotine withdrawal, such as intense cravings, nausea, tingling of hands and feet, insomnia, mood swings, and difficulty concentrating.)

13. Give the reason why most cooking pans are made of aluminium.

Pass to Agriculture under farm tools (For easy cleaning)

14. State one reason why the use of soap makes washing clothes easy.

C I B S.2 page 62 (Some household products use enzymes to speed up chemical reactions. For instance enzyme savinase in biological washing powders break down protein, starch or fat stains and even grease on clothes.)

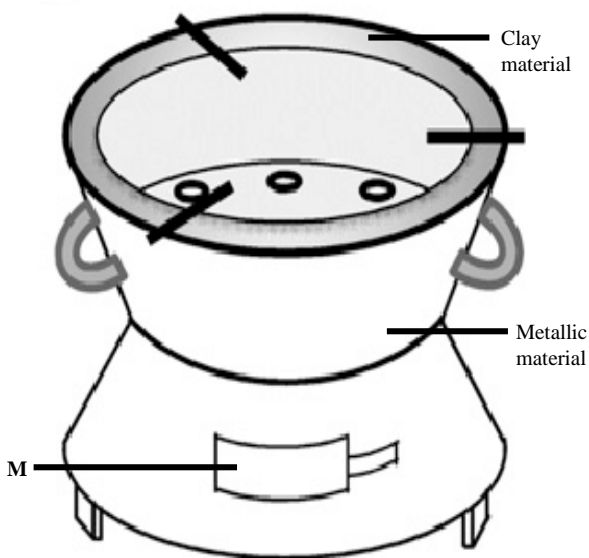
15. Apart from deforestation, mention any one other human activity that can result into flooding in our environment.

C I B S.1 page 200 (*Overgrazing*: The conversion of natural ecosystems to pasture land doesn't damage the land initially as much as crop production, but this change in usage can lead to high rates of erosion and loss of topsoil and nutrients.)

16. Mention any one sign of roundworm infestation in humans.

C I B S.4 page 174 (The commonest complaint is vague abdominal pain. The patient may experience listlessness (*lacking energy or enthusiasm*), *weight loss*, anorexia, swollen abdomen, intermittent loose stool and occasional vomiting.)

The diagram below shows a metallic charcoal stove. Study and use it to answer questions 17 and 18.



17. Give the function of the part labelled **M** when it's opened.

C I B S.2 page 256 (Now we know that ventilation is the same as breathing and so you can comfortably define ventilation as the process in which air in the atmosphere gets inside the body of an organism and air inside the body gets out to the atmosphere. Always know that the air in the

atmosphere that is needed by the body (charcoal stove) is oxygen to maintain burning and the air not needed by the body (charcoal stove) is carbon dioxide.)

18. State **one** advantage of building the inner wall of charcoal stove with clay.

C I B S.1 page 191 (When properly dried and baked it can become quite hard and rigid.)

19. State any one disadvantage of people living with domestic animals in the same house.

C I B S.4 page 48 (There are several viruses that have an animal or plant vector from where they affect humans. Some of the common vectors of viruses include; Birds, pigs, horses for influenza. Bats, dogs, and foxes for rabies. Monkeys for Ebola and Marburg viruses. Chimpanzees and monkeys for HIV.)

20. Give one way in which the use of biogas is helpful in the conservation of the environment.

C I B S.4 page 217 (It is renewable because it can never get finished as long as we continue to grow new trees to replace those that were cut down.)

21. State one effect of opaque objects on a beam of light.

Pass to Physics under topic: Light (Formation of a shadow)

22. Apart from making candles, mention any one other way in which bees-wax is useful to people.

C I B S.1 page 148 (The beeswax is gathered by humans for various purposes such as making candles, lip balms, lotions, soaps, creams)

23. State any one reason why farmers are encouraged to preserve food stuffs like sweet potatoes.

C I B S.1 page 82 (Stem tubers are designed for the purpose of storing food and vegetative propagation except those that have been preserved.)

24. Name any one force which a pulley overcomes when it is being used.

Pass to physics (load)

25. State one way in which mask is important in maintaining the proper functioning of the respiratory system.

C I B S.4 page 84 (When used correctly, these home-made masks can help prevent people who are asymptomatic or undiagnosed from transmitting SARS-CoV-2 when they breathe, talk, sneeze, or cough. This, in turn, slows the transmission of the virus.)

26. Apart from having bright colours, state any one other thing that attracts pollinators to flowers.

C I B S.3 page 307 (Has large sticky pollen grain so that they can attach themselves on the hairy body of insects.)

27. State any one way of caring for simple garden tools.

Pass to Agriculture (remove soil that got stuck on simple garden tools like hand hoes)

28. State any one way in which the child health card is important to a parent.

C I B S.4 page 12 (*Measurements of weight, length, and head circumference. These measurements recorded in child health card determine if the baby's weight and measurements are normal for the number of weeks of pregnancy.*)

29. State any one factor that affects the pitch of sound produced by an object.

C I B S.3 page 52 (*Pitch is a function of a sound wave's frequency i.e. the number of vibrations per unit time. High-frequency waves produce high-pitched sounds (think of stereo to refer to high pitched sound), whereas low-frequency waves produce low-pitched sounds (think of bass).*)

30. Name any one body part that may be checked during a school health parade.

Pass to general science (*finger nails, teeth, skin*)

31. State any one way in which screws can be important in our daily life.

Pass to physics (*tightening our tools*)

32. Apart from being source of food, give the reason why farmers hang green vegetables in poultry houses.

Pass to Agriculture (*promote exercise among birds in poultry farm*)

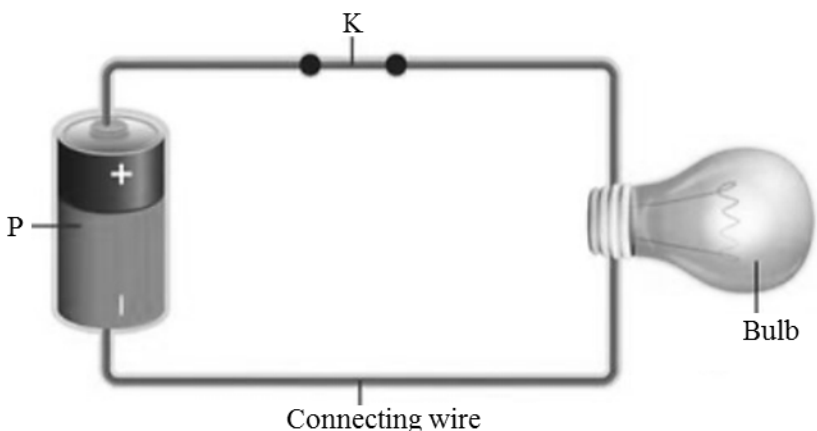
33. State any one change in food which shows that food has gone bad.

C I B S.1 page 45 (*Saprotrophic nutrition also known as lysotrophic nutrition is a process of extracellular digestion involved in the breakdown of decayed organic matter with formation of rhizopus on food*)

34. State what would be observed when a plastic pen rubbed in hair is brought close to small pieces of paper.

Pass to Physics (*The small pieces of the papers will stick onto the plastic pen*)

The diagram below represents a simple electric circuit. Study and use it to answer questions **35** and **36**.



35. Give the function of **P** in the circuit.

Pass to Physics (produce current)

36. Why would the bulb **not** light when a piece of glass is used to close **K**?

Pass to Physics (because glass does not conduct current)

37. Name any one part of the human body where a gliding joint is found.

C I B S.3 page 140 (The intervertebral joints and many of the small bones of the wrist and ankle (displayed on the left) are examples of gliding joints.)

38. State any one reason why pruning of trees is important in agroforestry.

Pass to Agriculture (Encourages growth of new productive plant part. Help remove the diseased parts of the trees)

39. Write down any one activity that a school environment club can do to protect a school water source.

C I B S.4 page 178 (Proper disposal of both faeces and urine i.e. in the toilet or latrine.). **C I B S.4 page 242** (Do not keep the tap running when not in use. In many cities, your local environment office can help with the disposal of medicines and chemicals. Check with your local authorities such district environmental officers if there is a chemical disposal plan for local residents. Buy more environmentally safe cleaning liquids for use at home and other public places. They are less dangerous to the environment.)

40. State **one** reason why a person suffering from HIV/AIDS is easily attacked by many other diseases.

C I B S.4 page 108 (An HIV-positive person will have fewer CD4-cells especially CD4 T cells than healthy individuals. As the CD4 count goes down, he or she may start to have signs of HIV, such as diarrhea, fever, and weight loss, while swollen lymph nodes, fatigue, and nights sweats that showed up after one week of exposure to the virus may continue.)

SECTION B

41. (a) State any two effects of rusting on iron sheet.

Pass to Chemistry (Softens the iron sheet and erodes away)

(b) Identify two ways in which people protect iron sheets from rusting.

Pass to Chemistry (By painting iron sheets)

42. The table below shows an example of a farm record. Study and use it to answer the questions that follow.

Date	Health problem	Animal(s) affected	Treatment/Control method	Cost of treatment
01/8/2023	Mastitis	Goats No. 4 and No.8	Antibiotics	17,000/-
12/10/2023	Worm infestation	Kids (06)	Dewormers	25,000/-
03/11/2023	Anthrax	All goats	Vaccination	50,000/-

(a) Name the farm record above.

Pass to Agriculture (Treatment record)

(b) Apart from Anthrax, mention any one other disease which is controlled by the method used on 03/11/2023

C I B S.4 page 80 (The best way to prevent swine flu is to get a yearly flu vaccination.)

(c) Give any two reasons why keeping such a record is important to farmers.

Pass to Agriculture (Help farmers track health history, monitor treatment effectiveness, meet certification requirement)

43. (a) Identify the type of soil erosion common in hilly areas.

C I B S.4 page 203 (Gully erosion is an advanced stage of rill erosion where surface channels are eroded to the point where the mechanical cultivation becomes difficult, impossible or very expensive.)

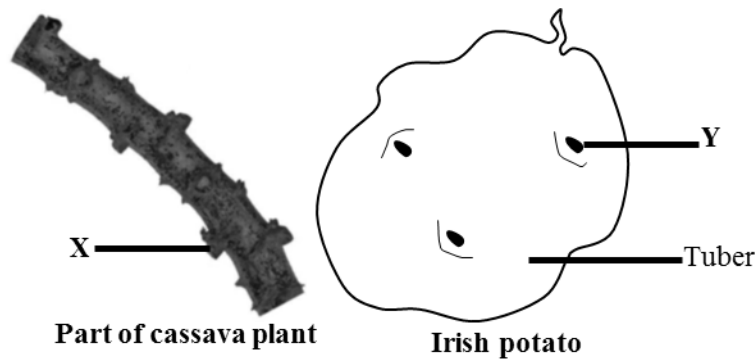
(b) State any one danger of soil erosion to the environment.

C I B S.4 page 204 (Seeds and plants can be disturbed or completely removed by the erosion. Organic matter from the soil, residues and any applied manure, is relatively lightweight and can be readily transported off the field.)

(c) Explain how deforestation causes soil erosion.

C I B S.4 page 202 (Plants and crops help maintain the structure of soils, reducing the amount of soil erosion. Areas with less naturally-occurring flora may be a hint that the soil is prone to erosion.)

44. The diagrams below show part of a cassava plant and Irish potato that are used in propagation. Study and use them to answer the questions that follow.



(a) Name the part of the cassava plant marked X

C I B S.3 page 248 (Stem tubers form from underground rhizomes. Stem tubers have eyes or **nodes** on them that can produce new shoots.)

(b) State the method of vegetative propagation where the part of a cassava plant shown above is used.

C I B S.3 page 247 (**Natural vegetative propagation** is defined as the act of producing offspring or multiplying of plants by the use of parts of plants without the involvement of man. Examples of plant parts that plants use to reproduce asexually include leaf tips, bulbs, corms, rhizomes, stolons and **tubers**.)

(c) In which one way is the function of part X of cassava plant similar to that of part Y of the Irish potato?

C I B S.3 page 248 (Stem tubers have eyes or nodes on them that can **produce new shoots**.)

(d) Give the importance of the tuber in the propagation of the Irish.

C I B S.3 page 247 (Natural vegetative propagation is defined as the act of producing offspring or **multiplying of plants** by the use of parts of plants without the involvement of man.)

45. (a) What is meant by the term vulnerable group of people?

C I B S.2 page 122 (**People most likely to be harmed**)

(b) Apart from the sick, name one other group of vulnerable people in a community.

C I B S.2 page 122 **The sick, aged etc.** (However, the vulnerable people (**people most likely to be harmed**) with certain disorders, such as liver diseases, cystic fibrosis, and Crohn's disease may need extra vitamin E.)

(c) State any two ways in which you can care for the sick in your community.

C I B S.2 page 113 (**Creation of equal health for all to facilitate the sharing of communication, collaboration and experiences in implementing the action plan. Embarking on a national 'Kick out HIV stigma' campaign.**)

46. Moses wanted to find the volume of an irregular object. He had the following material for the experiment; an irregular object, thread, overflow can, and water.

(a) Name one material Moses forgot to include in the list of his material.

Pass to Physics (Measuring cylinder)

(b) What is the use of the thread in the experiment?

Pass to Physics (To immerse the irregular object into the water)

(c) Describe how Moses will get the volume of the irregular object in his experiment.

Pass to Physics (He will pour a known amount of water in the overflow can. The amount that will pour out through the spout of the overflow can will be collected by the measuring cylinder under the spout and recorded. He will get the irregular object tied by a thread with some available length for holding it as it is being immersed into the water in the overflow can. This will cause the irregular object to displace the water that will pour through the spout into the measuring cylinder. This will also be recorded which will be subtracted from the volume of water before immersing the irregular object. The difference is the volume of the irregular object.)

47. (a) Identify any one body change in girls during adolescence.

C I B S.3 page 122 (These female secondary characteristics induced by estradiol include: growth of axillary hairs (armpit hairs), **pubic hairs**, teat pigmentation (making the skin of teats to be more darker), breast development, development of ovum, wet dreams, increased libido, increased external genitalia, widening of hips, speaking in high pitch (soprano) voice, etc.)

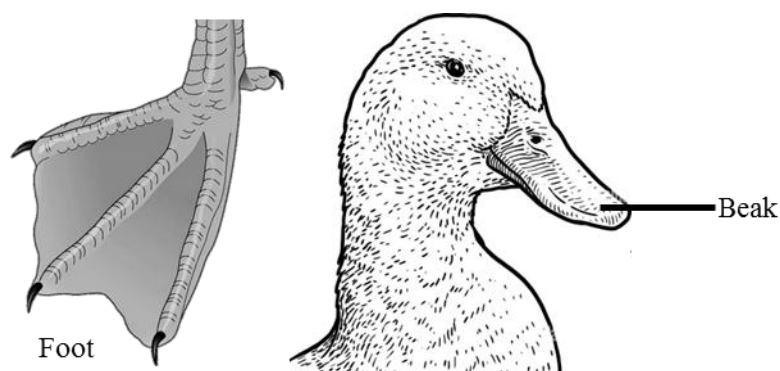
(b) State any two ways in which school boys can help to prevent teenage pregnancies.

C I B S.4 page 17 (Information about sexual and reproductive health and rights. Adequate access to services tailored to young people. Access to contraception)

(c) State any one way of caring for the reproductive system in humans.

C I B S.3 page 269 (Get treated for sexually transmitted diseases immediately, quit smoking and alcohol use, always use contraception and eat a balanced diet.)

48. The diagrams below are of a foot and a beak of a bird. Study and use them to answer the questions that follow.



(a) Identify the group of birds with the type of foot and beak shown.

Aquatic birds

(b) How do the parts of the bird shown above help it live well in its environment?

(i) Foot: **Swimming**

(ii) Beak: **C I B S.3 page 30** (Have their beaks designed in such a way that it is flat, grooved and with ridges on the inside for sieving worms from mud and **gripping slippery water animals.**)

(c) Give any one example of a domestic bird with such type of beak and foot.

Duck

49. Give any one way in which each of the following elements of Primary Health Care (PHC) is important in a community.

(i) Food and nutrition: **C I B S.2 page 2** (Nutrition is the process of **acquiring energy and minerals by accessing food.**)

(ii) Maternal and child health: **C I B S.4 page 9** (Prenatal care also known as antenatal care is medical care during pregnancy that **monitors the health of both the mother and the foetus. It is for regular check-ups that allow doctors or midwives to treat and prevent potential health problems throughout the course of the pregnancy and to promote healthy lifestyles that benefit both mother and child.**)

(b) Identify any two ways of giving health education to a community.

Pass to General health (Through health workshops. Through community health campaigns. Through collaboration with local organizations. Through outreach programs)

50. (a) Apart from planting crops in rows, give another method of planting crops.

Pass to Agriculture (Direct sowing. Transplanting. Seed broadcasting.)

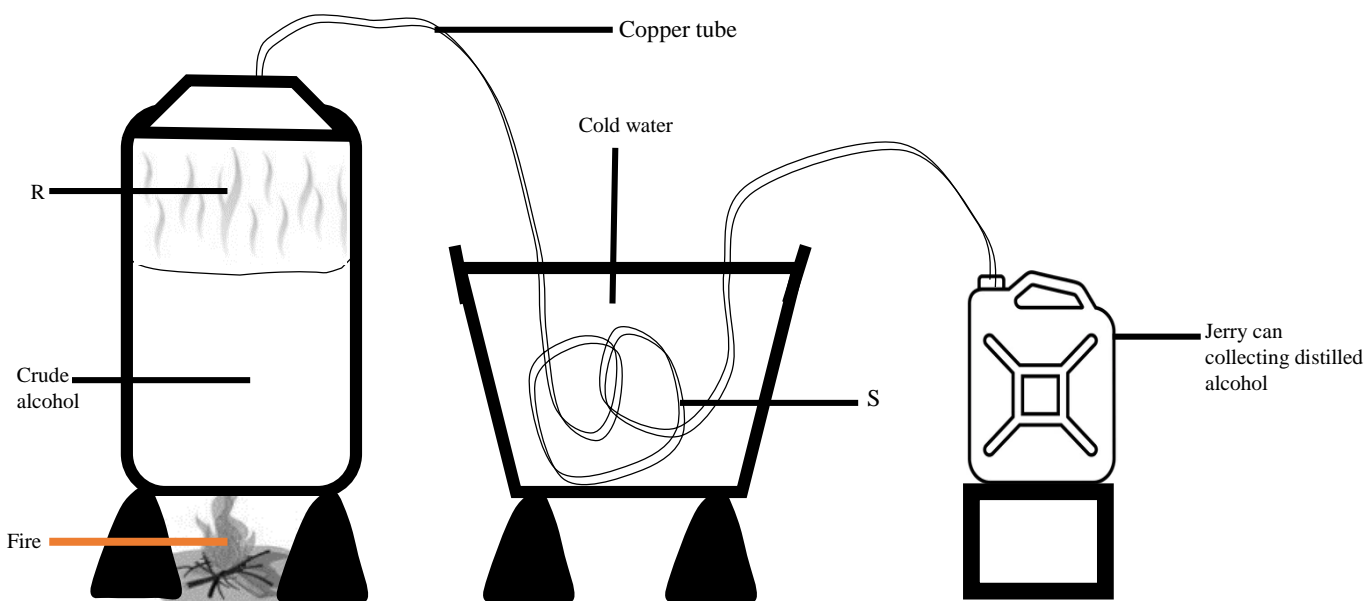
(b) Give any two advantages of planting maize in rows.

Pass to Agriculture (Better space utilization. Effective weed control. Improved irrigation.)

(c) State any one way in which the use of chemicals on a farm can be dangerous to a crop farmer.

C I B S.1 page 200 (Pesticides and other chemicals used on crop plants have helped farmers to increase yields. The problem is that the scientists have found that overuse of some of **these chemicals changes soil composition and disrupts the balance of microorganisms in the soil.** This stimulates the growth of harmful bacteria at the expense of beneficial kinds.)

51. The diagram on the next page shows the distillation method of making alcohol. Study and use it to answer the questions that follow.



(a) Identify the physical changes taking place

(i) at part marked R **C I B S.2 page 302** (Evaporation is change of liquid to vapour which is accompanied by loss of heat, hence cooling the body.)

(ii) in part S **Vapour to liquid**

(b) Give one reason why the container with crude alcohol should be properly sealed.

C I B S.2 page 280 (The whole apparatus is made air tight to keep out O_2 .)

(c) Give the function of the copper tube in the method shown above.

C I B S.2 page 302 (Conduction is transfer of heat from a hot object to a relatively mild body temperature of a body in direct contact with that hot object.)

52. (a) State any two health problems that are common in overpopulated areas.

C I B S.4 page 159 (Over cultivation leading to loss of soil fertility. Over exploitation of natural non-renewable resources.)

(b) Mention any two ways in which collecting information on human population helps to address health problems in a community.

C I B S.4 page 158 (Provides valuable insights that help address health problems through disease surveillance, identifying risk factors, planning healthcare resources, enabling targeted health education etc.)

53. (a) Give any two ways in which plants support human life.

C I B S.2 page 3 (The organic substance made in photosynthesis can later be used by animals and other non-photosynthetic organisms as food. The oxygen released into the environment by photosynthesis is used by all other animals to carry out respiration so as to generate energy to do other important roles.)

(b) Mention any two ways in which humans can conserve plant life.

C I B S.4 page 225 (Government holds forest reserves in trust for the benefit of all Ugandans. As part of its oversight role, the Legislature should ensure that government respects the public trust doctrine in forestry resources management.)

54. (a) Identify any two characteristics of the female anopheles mosquito that makes it a good vector for malaria.

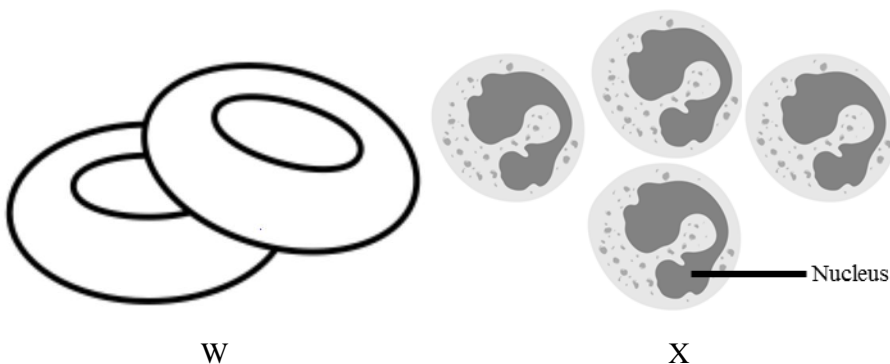
C I B S.1 page 159 and page 160 (The antennae are important for detecting host odors, as well as odors of breeding sites where females lay eggs. Saliva with anticoagulant is pumped down the hypopharynx to prevent clotting, and then the blood is sucked up the labrum.)

(b) How do the following methods help in controlling the spread of malaria?

(i) Pouring oil on stagnant water. **C I B S.1 page 161** (Pour oil on stagnant water to suffocate mosquito larvae)

(ii) Sleeping under a mosquito net. **C I B S.1 page 161** (Sleep under pre-treated mosquito nets to prevent mosquito bites.)

55. The diagrams below show the structure of different blood cells in the human body. Study and use them to answer the questions that follow.



(a) Name the blood cell marked X

C I B S.2 page 220 White blood cells (They have an irregular shaped nucleus which allows them to squeeze through the narrow capillaries.)

(b) Give the function of the blood cells marked:

(i) W **C I B S.2 page 215 Transport oxygen in the body.** (Most oxygen i.e. 98.5 percent is bound to a protein called hemoglobin and carried to the tissues as you can see on the bottom left of this page.

When oxygen gets loaded onto haemoglobin, it forms an oxygen-haemoglobin complex called oxyhaemoglobin.)

(ii) **X C I B S.2 page 220** (White blood cells *protect the body from infection.*)

(c) Identify any one disease which destroys blood cells **W**.

C I B S.4 page 179 Malaria (After about 72 hours large numbers of merozoites break out of the red blood cells, causing periodic chills (*feeling of coldness*) and fever (*rise in body temperature*). Some of the merozoites infect other red blood cells.)

C I B TEXTBOOKS ALONE HAVE MANAGED TO ANSWER ALL QUESTIONS IN INTEGRATED SCIENCE UNEB PLE 2023 WITH REFERENCES TO THE EXACT PAGES FOR DETAILS INDICATED ON THE QUESTION PAPER. ALL THE ITALICIZED TEXT IN BRACKETS ARE THE EXACT WORDS IN C I B TEXTBOOKS GUIDING ONE TO THE ANSWERS.

ALL QUESTIONS NOT RELATED TO BIOLOGY HAVE BEEN PASSED TO THE APPROPRIATE SUBJECTS WITH THEIR ANSWERS NOT ITALICIZED IN THE BRACKETS.

THEREFORE IT'S A TESTAMENT THAT C I B TEXTBOOKS ARE SUITABLE TO ALL PRIMARY SCHOOLS ANYWHERE IN THE WORLD.

C I B TEXTBOOKS ALSO ALONE ANSWERED EACH AND EVERY SINGLED QUESTIONS IN UNEB UCE 2023 BIOLOGAY PAPER ONE. THEREFORE IT'S ALSO A TESTAMENT THAT C I B TEXTBOOKS ARE SUITABLE TO ALL O'LEVEL STUDENTS IN ALL SECONDARY SCHOOLS ANYWHERE IN THE WORLD.

NEXT WEEK C I B TEXTBOOKS WILL START ANSWERING UACE 2023 BIOLOGY PAPER ONE AND TWO. ONLY QUESTIONS LINKED TO O'LEVEL WILL BE ATTEMPTED BY C I B TEXTBOOKS. C I B TEXTBOOKS WILL MANAGE TO ANSWER MORE THAN 65% OF THE QUESTIONS IN EACH OF THE PAPERS. THIS C I B TEXTBOOKS GUARANTEE YOU.