

<b>GBAT MOCK</b>	<b>2&amp;1</b>
JUNE 2024	
SCIENCE	
<b>ESSAY &amp; OBJECTIVE</b>	

Name: .....

Index Number.....



## GB ASSESSMENT TEST (GBAT)

**JUNE 2024**

**SCIENCE 2&1**

**2 hours 10 minutes**

*All answers must be provided on clean sheet of papers (Answer booklet).*

Write your name and index number on the sheets.

This examination consists of two papers. Answer Paper 2 which comes first, in your answer booklet and Paper 1 on your Objective Test answer sheet. Paper 2 will last for 1 hour 25 minutes and is in two sections; **A & B**. Answer all questions in section A and any other **three** questions in section B. Objective test will last for 45 minutes.

Answer all Paper 2 questions in your answer booklet.

Credit will be given for clarity of expression and orderly presentation of materials.

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This paper is in two parts; A & B. Answer all questions in part A and any other **three** questions in part B.

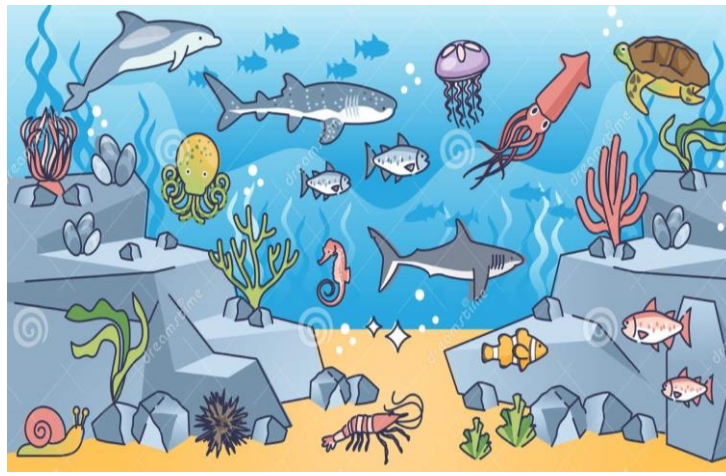
SECTION A

TEST OF PRACTICALS

1. (a) Study the ecosystems shown below and use it to answer the following questions.



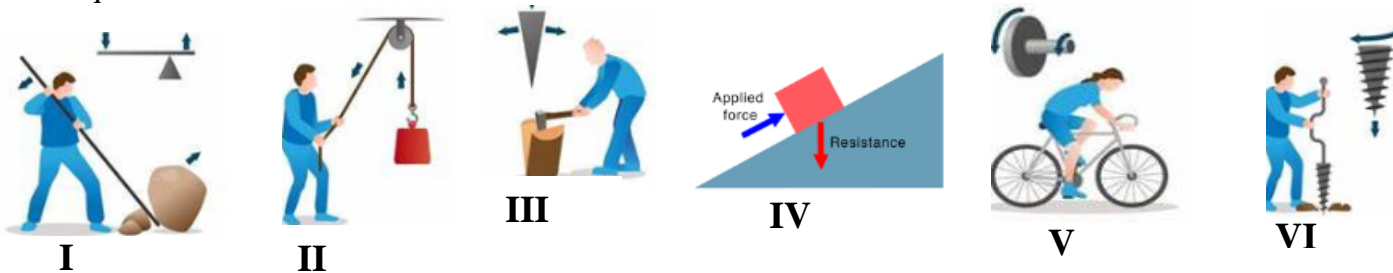
**A**



**B**

- i. Identify the types of ecosystems labelled A and B. [2 marks]
- ii. What makes ecosystem B the least productive? [3 marks]
- iii. Soil mites, earthworm, mushroom, dung beetle can be found in ecosystem A.  
What do these organisms share in common? [2 marks]
- iv. Why does decomposition occur at a faster rate in the tropics? [3 marks]

(b) The pictures below depict the different kinds of simple machines. Study them carefully and answer the questions that follow.



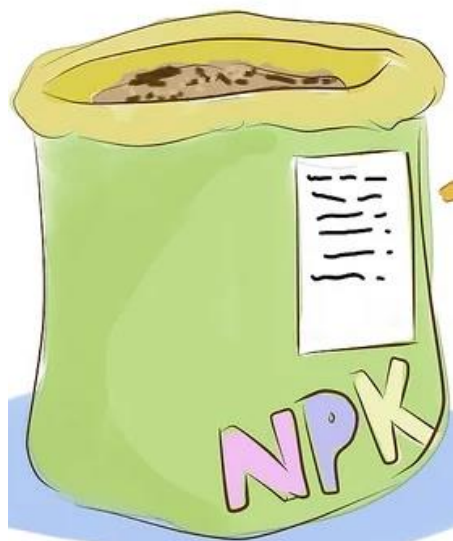
- i. Identify the simple machines labelled I-VI. [6 marks]
- ii. In which of the simple machines would you find a fulcrum? [2 marks]
- iii. These two parts act as one simple machine. They roll and are found on bikes and cars. Which of the simple machines above best fits this description? [2 marks]

(c) Study the table and answer the following questions.

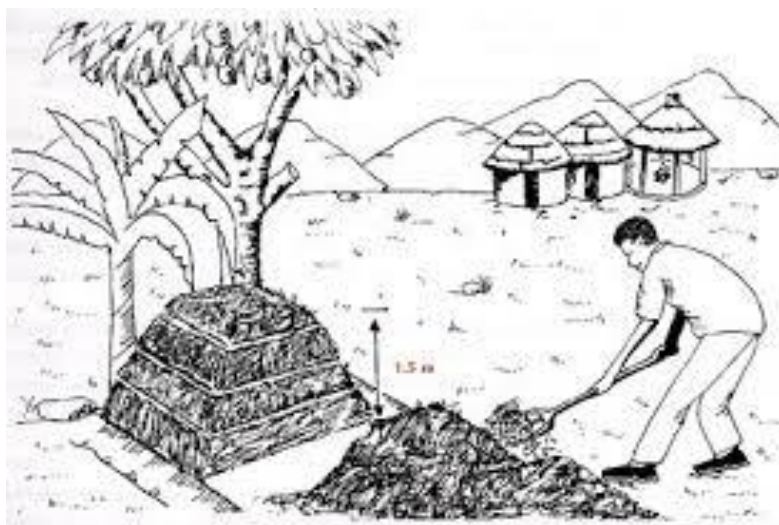
Atom	Atomic number
A	11
B	17

- Between A and B, which is more metallic? [ 1 mark ]
- Explain your answer in c. i. above. [ 2 marks ]
- Write a balanced equation for the combination of A and B. [ 3 marks ]
- What type of bond is formed between A and B? [ 2 marks ]
- Why does the product of A and B have a high melting point? [ 2 marks ]

(d) Study the diagrams below carefully and answer the questions that follow.



**Y**



**Compost**

- Group the diagrams above under organic and inorganic plant nutrient. [2 marks]
- Mention **three (3)** physical properties of compost. [3 marks]
- Briefly explain how a farmer would apply the plant nutrient Y using the foliar method. [2 marks]
- Which of the plant nutrients depicted above would you suggest for use by a *peasant farmer*.  
Give **three (3)** reasons for your answer. [3 marks]

## SECTION B

### ESSAY

Answer only **three (3)** questions from this part.

2. (a) i. Why does the moon change its shape daily? [2 marks]  
ii. Briefly explain why meteors are not visible during the day. [3 marks]
- (b) i. Why are aquatic species more comfortable in cold water than warm water? [3 marks]  
ii. Define food web. [2 marks]
- (c) i. Identify the **three (3)** main stages involved to ensure that power supply gets to our homes. [3 marks]  
ii. How can you reduce the brightness of the LED in your room? [2 marks]
- (d) i. Name **four (4)** common ways of feeding commercial animals. [4 marks]  
ii. Name **one (1)** common feed used to feed farm animals. [1 mark]
3. (a) What is the difference between balanced force and unbalanced force? [4 marks]
- (b) It is time to clear the weeds on the compound of your school.  
i. List **two (2)** tools you will need.  
ii. Mention **two (2)** precautions you will take to protect yourself and your school mates. [4 marks]
- (c) i. What is food poisoning? [2 marks]  
ii. What are some of the signs that someone is suffering from food poisoning? Mention **three (3)**. [3 marks]
- (d) i. List **three (3)** elements on the periodic table that are considered as metals. [3 marks]  
ii. Why are Helium and Argon said to be noble gases? [4 marks]
4. (a) Yaw would like to measure the acidity or basicity of an orange he bought at school.  
i. What device would you recommend he uses? [2 marks]  
ii. If the result was **11** after measuring, what does it imply? [2 marks]
- (b) State the function of the following specialized cells. [4 marks]  
i. Xylem  
ii. Guard cells
- (c) i. Mention **three (3)** non- planetary bodies in the solar system. [3 marks]  
ii. Do stars emit light during the night only? Explain your answer. [4 marks]
- (d) Give **five (5)** advantages of organic farming. [5 marks]

5. (a) i. What is climate change? [3 marks]  
ii. Mention **two (2)** effects of climate change. [2 marks]
- (b) i. Why is it not advisable to place hot food in a freezer? [3 marks]  
ii. Outline **two (2)** differences between heat and temperature. [2 marks]
- (c) i. Name the **two (2)** elements that combine to form table salt. [2 marks]  
ii. Amina would like to separate a mixture of salt and water and retain its constituents.  
What is the best method to use? Explain your answer. [3 marks]
- (d) i. Why do plants not exist in the darkest parts of the ocean? [3 marks]  
ii. Trace the path through which a plant cell goes through to become an organism. [2 marks]

***END OF ESSAY***

**DO NOT TURN OVER THIS PAGE UNTIL YOU ARE TOLD TO DO  
SO**

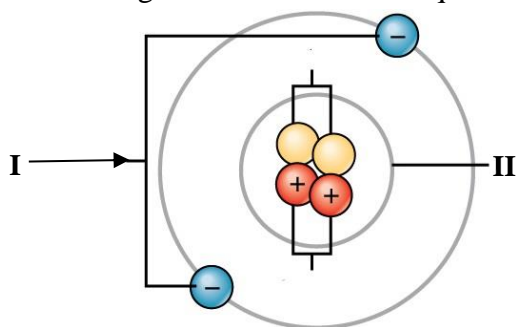
Answer **all** the questions.

45 minutes

Each question is followed by **four** options lettered A to D. Find the correct option for each question and shade **in pencil** on your answer sheet the space which bears the same letter as the option you have chosen. Give **only one** answer to each question.

- The closest star to our solar system is
  - Polaris.
  - Vega.
  - Proxima Centauri.
  - Antares.
- A solution of gas in liquid amongst the following is
  - soda water.
  - German silver.
  - sugar solution.
  - mercury.
- Which of these statements is **true**.
  - Non-metal atoms gain electrons to form negatively charged ions.
  - Valency is the number of neutrons an atom must lose or gain to attain the nearest noble gas electronic configuration.
  - Group 6 and 7 elements are metals.
  - Metal atoms gain electrons to form positively charged ions.
- If you are in a vehicle and it suddenly makes a sharp turn, your body moves to the side. What principle explains this?
  - Gravity
  - Inertia
  - Energy
  - Friction

Use the diagram below to answer questions 5 and 6



- Identify the parts labelled I and II.
  - Electrons and shell .
  - Protons and electrons.
  - Neutrons and shell.
  - Protons and shell.

- What is the mass number of the atom?
  - 2.
  - 4.
  - 6
  - 2
- Which one of the following is not a bacterial disease?
  - COVID 19
  - AIDS
  - Measles
  - All the above
- Mr. Ayakum feeds his chickens groundnut cake separately from their main meal. Why does he do this?
  - He does so because it is expensive.
  - The chickens cannot eat it together with the main meal.
  - To replace a deficient nutrient.
  - It is less expensive to prepare.
- One of these breathes from the skin.
  - Earth worm
  - Snake
  - Spider
  - Fish
- Which juice secreted in the alimentary canal helps to break down fats?
  - Hydrochloric acid
  - Saliva
  - Bile juice
  - Mucus
- What is the relationship between the amount of effort required and its distance from the fulcrum?
  - No known relationship exists.
  - The farther from the fulcrum the effort is, the equal effort needed.
  - The farther from the fulcrum the effort is, the more effort needed.
  - The farther from the fulcrum the effort is, the less effort needed

12. In which part of the respiratory system does gaseous exchange takes place?
- Alveoli.
  - Trachea.
  - Pharynx.
  - Larynx.
13. Snakes and lizards alternate between basking in the sun and resting in the shade to keep their body temperatures within the range that permits them to stay active. This makes them
- warm blooded.
  - cold blooded.
  - predators
  - scavengers.
14. Which acid is present in tomato?
- Citric acid
  - Oxalic acid
  - HCL
  - Nitric acid
15. Kofi is bleeding profusely from a cut. He might be suffering from a deficiency of
- Vitamin A
  - Vitamin K
  - Vitamin C
  - Vitamin B1
16. At what point on earth does gravity not exist?
- North pole.
  - South pole.
  - Centre of the earth.
  - In the clouds.
17. A benefit obtained from using a lever is called
- force.
  - load.
  - advantage.
  - effort.
18. The property of metals we consider when making bells is
- malleability.
  - conductivity.
  - sonorousness .
  - ductility.
19. The process where by water moves mineral materials deep down the soil is known as
- transpiration.
  - leaching.
  - soil erosion.
  - desilting.
20. The formation of hydrogen chloride involves which type of bond?
- Ionic bond
  - Covalent bond
  - Nuclear fission
  - Atomic bond
21. A magnet made by using electric current is known as
- temporary magnaet.
  - permanent magnet.
  - electricmagnet.
  - electromagnet.
22. Which of these processes takes carbon from the environment?
- Combustion.
  - Decomposition
  - Photosynthesis
  - Respiration
23. Why is it not advisable to hold the terminals of a capacitor with bare hands?
- It can cause skin cancer
  - It can cut off one's hand
  - It can give electrical shock.
  - It contains chemical energy.
24. All prokaryotic cells
- have no nucleus .
  - have nucleus.
  - are found in multi-celled organisms.
  - do not have ribosomes.
25. Which of the following plans is used as a waste management plan?
- Plan for recycling.
  - Plan for reducing.
  - Plan for reuse.
  - Integrated plan.
26. Due to their semiconductor properties, the non-metal used in computers and T.V. is
- silicon.
  - gold.
  - tin.
  - iron.
27. Farmers in Ghana are faced with all these problems **except**
- climate change.
  - lack of irrigation facilities.
  - lack of labour.
  - lack of credit facilities.

28. One of these statements is **true** about this animal.
- it does not have gills.
  - It does not give birth to live young ones.
  - It is not aquatic.
  - It is a carnivore.



29. All these diseases are transmitted by mosquitoes **except**

- polio.
- zika fever.
- nile virus.
- malaria.

30. Ribosomes are sites for

- fat synthesis.
- respiration.
- protein synthesis.
- photosynthesis.

31. Ocean thermal energy is due to

- energy stored by waves in the ocean.
- pressure difference at different levels in the ocean.
- temperature difference at different levels in the ocean.
- tides arising out in the ocean.

32. One practice that can increase productivity in agriculture is

- overgrazing.
- crop diversification.
- defforestation.
- using weedicides to clear weeds on the farm.

33. The instrument used to hear heart sound is

- barometer.
- thermometer.
- stethoscope .
- pipette.

34. Which of the following is **not** a cash crop?

- Tea
- Cocoa
- Coffee
- Mango

35. Which part of alimentary canal receives bile from the liver ?

- Large intestine
- Small intestine
- Pancreas
- Stomach

36. When air is blown from mouth into a test-tube containing lime water, the lime water turns milky due to the presence of

- carbon dioxide.
- oxygen.
- nitrogen.
- helium.

37. Mr. Adongo rears cattle only. He constantly moves them from place to place to search for grazing fields. What type of farming system is being practiced by Mr. Adongo?

- Land rotation
- Pastoral farming
- Subsistence farming
- Crop rotation

38. Which of the following statements is true for acids?

- Bitter and changes red litmus paper to blue.
- Bitter and changes blue litmus paper to red.
- Sour and changes blue litmus paper to red.
- Sour and changes red litmus paper to blue.

39. Which of these devices produces electric current ?

- Switch
- Ammeter
- generator
- Resistor

40. Which among the following alloys contain mercury as one of its constituents ?

- Cuprinickle
- Solder
- Bronze
- Zinc amalgam