

GHANA EDUCATION NEWS (GEN MOCK)

HOME MOCK SEPTEMBER 2022

INTEGRATED SCIENCE 1 & 2



Name.....

Index Number.....

GHANA EDUCATION NEWS (GEN MOCK)

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GHANA EDUCATION NEWS MOCK – SEPTEMBER 2022 EDITION

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PERFORMANCE BOOSTER - MOCK NUMBER 4

SEPTEMBER 2022

INTEGRATED SCIENCE

1 Hr 45 MIN

Do not open this booklet until you are told to do so. While you are waiting, read and observe the following instructions carefully. Write your name and index number in ink in the spaces provided above.

This booklet consists of two papers; I and II. 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 hr after which the answer book let will be collected. Do not start Paper until you are told to do so. Paper 1 will last 45 MINS .

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TURN OVER

INTEGRATED SCIENCE 2

ESSAY [100 marks]

1 ¼ hours

This paper is in **two** sections: **A** and **B**. Answer **Question 1** in section **A** and any other **four** questions in section **B**
Credit will be given for clarity of expression and orderly presentation of material.

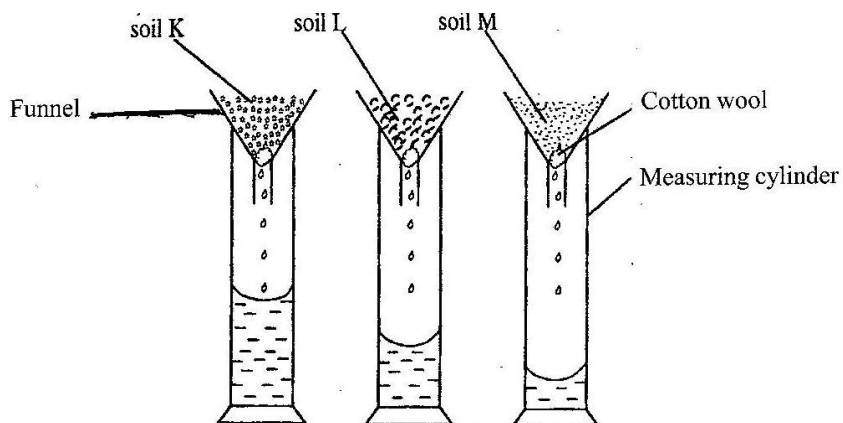
SECTION A

[40 marks]

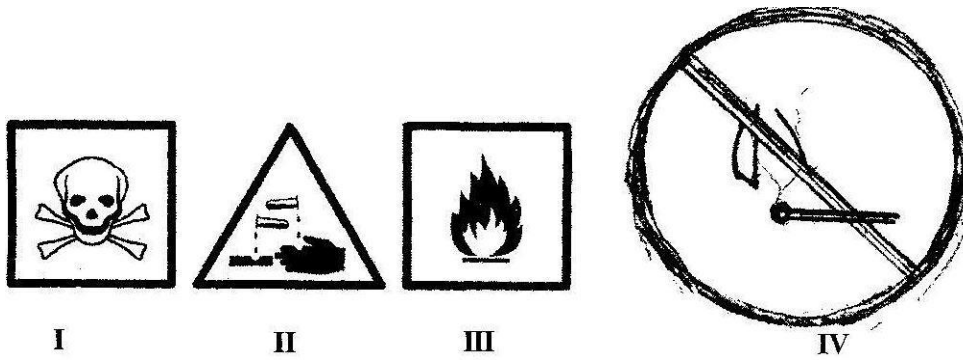
Answer **all** of Question 1

1. (a) The funnels in the diagram below contain equal amounts of different types of soils labelled **K**, **L** and **M**. Equal volumes of water were poured onto each soil at the same time and allowed to drain for 20 minutes.

Study the diagram and answer the questions that follow

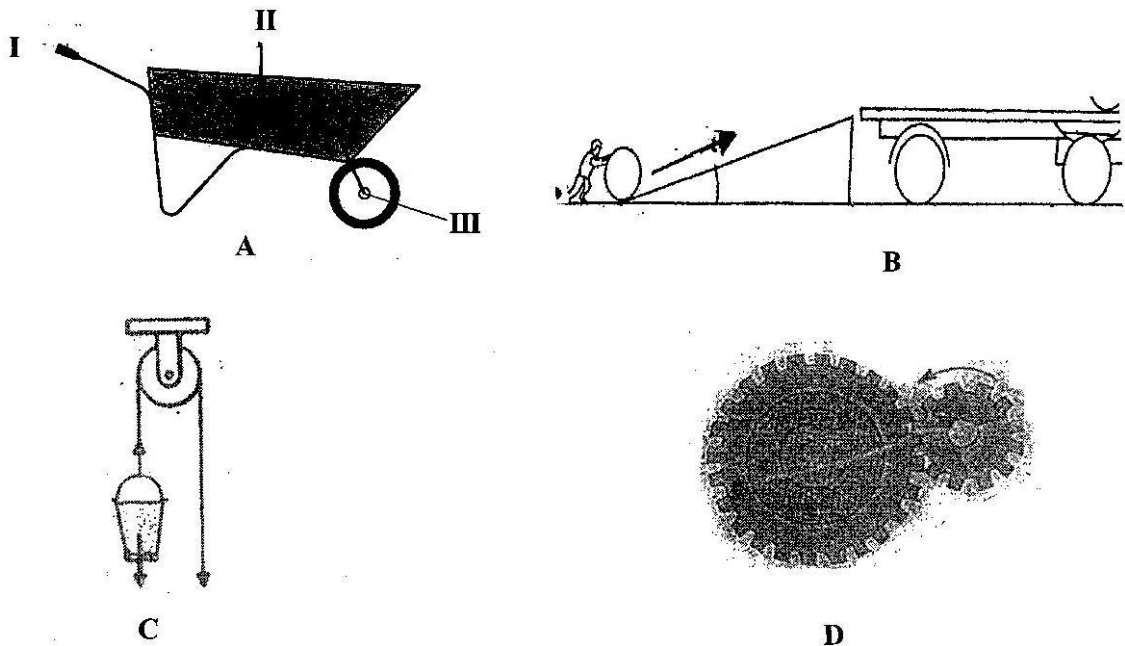


- (i) What is the aim of the experiment? [2 marks]
 - (ii) Which soil has the highest rate of drainage? [1 mark]
 - (iii) Which soil has the highest water retention capacity? [1 mark]
 - (iv) Which soil is **most** likely to lose water and dry faster after rainfall? [1 mark]
 - (v) Which soil is **most** likely to be waterlogged after rainfall? [1 mark]
 - (vi) Which of the soil types would be suitable for maize cultivation? [1 mark]
- (b) The diagram below illustrates hazard symbols labelled **I**, **II**, **III** and **IV**.
Study the diagram carefully and answer the questions that follow.



- (i) What does **each** of the symbols labelled **I, II, III** and **IV** represent?
- (ii) Name **one** substance **each** that is associated with:
- (α) **I**;
- (β) **II**;
- (γ) **III**. [3 marks]
- (iii) Name a place where the hazard symbol labelled **IV** is often displayed [1 mark]
- (iv) Which of the symbol(s) is / are found on chemical containers? [3 marks]

The diagrams below are illustrations of devices used to do work easily
Study the diagrams and answer the questions that follow



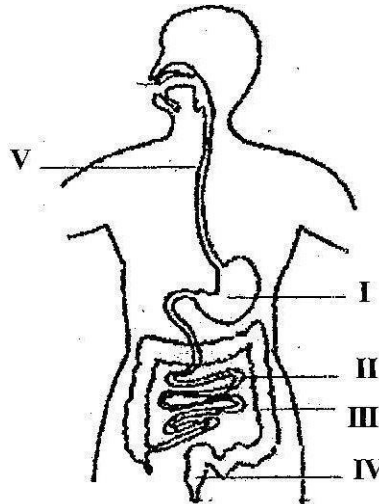
- (i) Give a general name for the devices. [1 mark]
- (ii) Identify **each** of the devices labelled **A, B, C** and **D**. [4 marks]
- (iii) Name the parts labelled **I, II** and **III** of device **A** when it is considered as a lever. [3 marks]
- (iv) What does the arrow represent in the device labelled **B**? [1 mark]
- (v) Name the type of work done with **each** of the devices labelled:
- (α) **C**;

(β) D;

[2 marks]

- (d) The diagram below illustrates the digestive system in humans.

Study the diagram carefully and answer the questions that follow



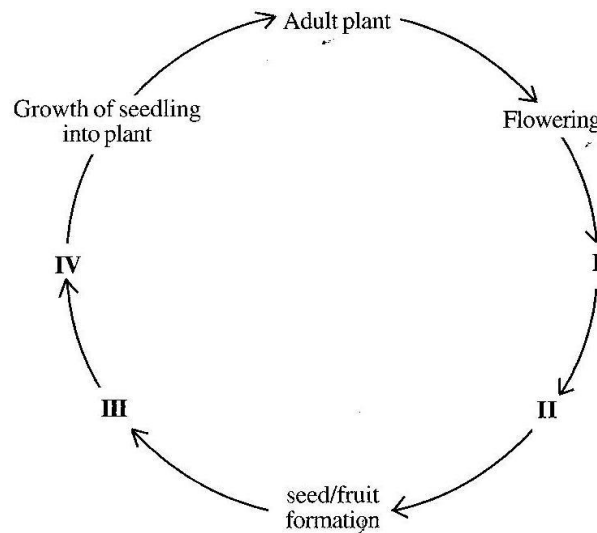
- (i) Name **each** of the parts labelled **I, II, III, IV** and **V** [5 marks]
- (ii) Name the part(s) of the digestive system where
- (α) digestion of food substances occur
- (β) digested food is absorbed into the bloodstream [3 marks]
- (iii) Name the end-products of the digestion that is absorbed into the bloodstream [3 marks]

PART II
[60 marks]

Answer four questions only from this section

2. (a) (i) What is *germination of seed*?
- (ii) State **two** conditions necessary for the germination of seed.
- (b) State **four** methods used in identifying farm animals
- (c) Explain why it is easier to cut a piece of yam with a sharp knife than with a blunt knife
- (d) State **three** differences between a *metal* and a *non-metal*.
3. (a) (i) What is *technology*?
- (ii) State **two** differences between *science* and *technology*. [4 marks]

- (b) Draw potassium atom and show the distribution of electrons in its shells.
[K = 19] [4 marks]
- (c) What energy transformations take place in **each** of the following activities?
(i) Using a flashlight battery to produce light in a bulb.
(ii) Using a microphone to address a gathering. [4 marks]
- (d) List **three** components of soil. [3 marks]
4. (a) (i) Explain the term electromagnetism.
(ii) Given a nail, insulated wire, key (or switch) and a battery, show by means of a circuit diagram how the nail can be magnetized.
- (b) List three symptoms of malaria.
- (c) State three ways of keeping the environment clean.
- (d) Write down the names of the new substances formed when the following compounds react:
(i) Ammonia and dilute hydrochloric acid;
(ii) Sodium hydroxide and dilute hydrochloric acid;
(iii) Calcium carbonate and dilute hydrochloric acid.
5. (a) (i) State the difference between an opaque object and a translucent object.
(ii) Give **one** example each of an opaque and a translucent material.
- (b) (i) What is the importance of seed dispersal?
(ii) Name **two** types of fruits and state their mode of dispersal.
- (c) (i) What is recycling?
(ii) Give **two** advantages of recycling of materials
(iii) List **three** recycled products in Ghana.
6. (a) (i) What is *weather*?
(ii) State **two** differences between *weather* and *season* [4 marks]
- (b) State the composition of **each** of the following alloys;
(i) steel;
(ii) stainless steel [3 marks]
- (c) List **four** benefits of vegetables to humans [4 marks]
- (d) The diagram below is an illustration of life-cycle of a flowering plant.



Name **each** of the stages labelled **I, II, III** and **IV**

[4 marks]

INTEGRATED SCIENCE 1

OBJECTIVE TEST

45 minutes

1. Which of the following is a liquid?
 - A. iron
 - B. mercury
 - C. brass
 - D. gold

2. Photosynthesis in plants requires chlorophyll, sunlight, water and
 - A. oxygen
 - B. carbon dioxide
 - C. steam
 - D. hydrogen

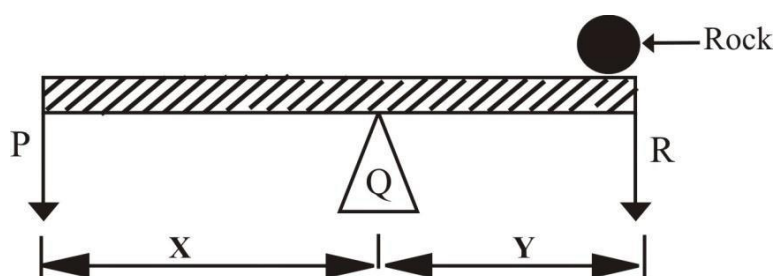
3. Why is it bad to throw faeces into rivers? Because
 - A. other people collect drinking water from them
 - B. it changes the colour of the river
 - C. it causes hardness of the water
 - D. the faeces cannot dissolve in the water

4. Steel is an alloy of
 - A. Iron and Carbon
 - B. Zinc and Copper
 - C. Tin and Copper
 - D. Iron and Zinc

5. Which of the following is not a communicable disease?
 - A. smallpox

- B. chicken pox
 - C. influenza
 - D. pneumonia
6. A mixture of sugar and water can be separated by
- A. filtration
 - B. evaporation
 - C. decantation
 - D. distillation
7. On the moon, there are large holes called
- A. valleys
 - B. gullies
 - C. spurs
 - D. craters
8. The purpose of vaccination is to
- A. replace poisoned tissues
 - B. kill disease-producing organisms in the body
 - C. increase the activity of white blood cells
 - D. induce the production of anti-bodies
9. Which of the following takes the shape of its container?
- A. Chalk
 - B. Charcoal
 - C. Paper
 - D. Petrol
10. Which of the following substances reacts with ammonium chloride to produce ammonia gas?
- A. Calcium hydroxide
 - B. Calcium chloride
 - C. Calcium carbonate
 - D. Calcium sulphate
11. The substance that sublimates when heated is
- A. baking powder
 - B. camphor
 - C. common salt
 - D. sugar

Use the figure below to answer Questions 12 and 13



- A rigid bar is balanced horizontally at a point by placing a rock on the bar as shown
12. Which of the parts labeled represents the pivot?
A. P B. Q C. R D. X
13. The effort is represented by
A. P B. Q C. R D. X
14. Gaps are left between railway lines to
A. prevent contraction
B. prevent rusting
C. allow for expansion
D. enable a train to stop
15. The structure which helps a fish to breathe under water is the
A. gill
B. air sac
C. operculum
D. mouth
16. Onions are planted by means of
A. bulbs
B. corms
C. suckers
D. rhizomes
17. The substance that enables green plants to trap sunlight for the manufacture of food is
A. chlorophyll
B. chloroplast
C. phloem
D. xylem
18. Which of these organs in humans releases carbon dioxide as a waste product?
A. Kidney
B. Liver
C. Lung
D. Skin
19. Exchange of gases takes place in the respiratory system through the
A. Bronchi
B. Lungs
C. nostrils
D. trachea
20. The taste of water changes when it is boiled because
A. heat is absorbed during boiling
B. evaporation takes place during boiling
C. air is lost during boiling
D. steam is produced during boiling
21. Boiling and chlorination are used in water purification to
A. kill germs
B. help suspended particles to settle
C. remove suspended particles

D. remove hardness of the water

22. An example of intensive system of poultry keeping is the
- A. deep litter system
 - B. fold unit system
 - C. free range system
 - D. Free-running system

23. During drought, some plants dry out because of high
- I. atmospheric temperature
 - II. humidity
 - III. rate of evaporation

Which of the statements above is/are correct?

- A. III only
- B. I and II only
- C. I and III only
- D. I, II and III

24. The practice of starting new organization in response to identified opportunities is termed
- A. agribusiness
 - B. business enterprise
 - C. entrepreneurship
 - D. management

25. One advantage of friction is that it
- A. enables cutting tools to be sharpened
 - B. increases the efficiency of machines
 - C. produces a lot of heat in machines
 - D. wears off the soles of shoes

26. An example of a disease vector is
- A. earthworm
 - B. liver fluke
 - C. tapeworm
 - D. tick

27. An example of a derived quantity is
- A. length
 - B. mass
 - C. time
 - D. velocity

28. In electronic circuits, LEDs are used to indicate the absence or presence of
- A. emitter and collector
 - B. electric current
 - C. p-n junction
 - D. voltage source.

29. The organelle which occupies the largest portion of a plant cell is the
- A. chloroplast.
 - B. mitochondrion.
 - C. nucleus.
 - D. vacuole.

30. Which of the following factors contribute to early parenthood?
- I. Illiteracy
 - II. Poverty
 - III. Peer pressure
 - IV. Lack of parental care
- A. I and II only
 - B. II and III only
 - C. III and IV only
 - D. I, II, III and IV
31. Plants lose water through a process called
- A. photosynthesis
 - B. fertilization
 - C. transpiration
 - D. respiration
32. The process by which living things increase in number is referred to as
- A. growth
 - B. development
 - C. reproduction
 - D. multiplication
33. Regular brushing of teeth is primarily done in order to
- A. keep the mouth fresh
 - B. clear away food particles from the teeth
 - C. remove bad smell in the mouth
 - D. kill bacteria in the mouth
34. Friction is defined as a force which
- A. accompanies motion
 - B. acts against motion
 - C. causes motion
 - D. makes motion easy
35. Which of the following organisms causes malaria?
- A. Tsetsefly
 - B. Fungi
 - C. Virus
 - D. Plasmodium
36. The outer ear is also referred to as
- A. cochlea
 - B. tympanum
 - C. pinna
 - D. incus
37. Trees in desert regions have thick barks which enables them to
- A. prevent heat loss
 - B. absorb more light
 - C. prevent water loss
 - D. absorb more water
38. By the end of digestion, lean meat is turned into
- A. amino acids

- B. fatty acids
- C. glycerol
- D. glucose

39. Which of the following diseases affects the lungs?

- A. Cholera
- B. Measles
- C. Tetanus
- D. Tuberculosis

40. Which of the following structures regulate the amount of light that enters the eye?

- A. Choroid
- B. Cornea
- C. Iris
- D. Lens