

**EDUCATION-NEWS CONSULT
DEC. 2023 BECE HOME MOCK 2**

**(2024 BECE)
INTEGRATED SCIENCE 1 & 2**

2 HOURS

Name.....

Index Number.....



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EDUCATION-NEWS CONSULT MOCK – DEC 2023 EDITION FOR 2024 BECE

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SPECIAL PERFORMANCE BOOSTER – MOCK 2

DECEMBER 2023

INTEGRATED SCIENCE

1 HR, 45 MINS

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 hour after which the answer book let will be collected. Do not start Paper until you are told to do so. Paper 1 will last 60 minutes.

VERY IMPORTANT INSTRUCTIONS

1. *Read through the questions, brainstorm and plan your answers before you finally answer them. This is one of the good ways to manage your time in an exam and to do well.*
2. *Write clearly, use simple expressions and provide the best answers possible.*
3. *Write answers that provide additional information. If you just list answers or provide one to three worded answers, your will fail the paper.*
4. *Do well to explain your answers to help earn full marks. Check your units of measurement, spellings, grammar and read over your work before submitting.*
5. *Write question numbers boldly, start every new major question (answers) on a new page.*
6. *Do not rewrite the full question before answering. Only write the question number.*
7. *Show workings in all instances in section B if the question involves calculations.*

[Turn over

SECOND MOCK EXAMINATION - BASIC 9 - SCIENCE

DURATION: 2 HOURS

PAPER 2

[100 MARKS]

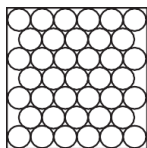
This paper is in two parts: I and II. Answer question 1 in part I and any other four questions in part II. Answer all questions in your answer booklet. Credit will be given for clarity of expression and orderly presentation of materials.

PART I

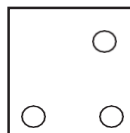
[40 MARKS]

Answer all of Question 1

1. (a) Look at the diagrams showing the particles in a solid and a gas.



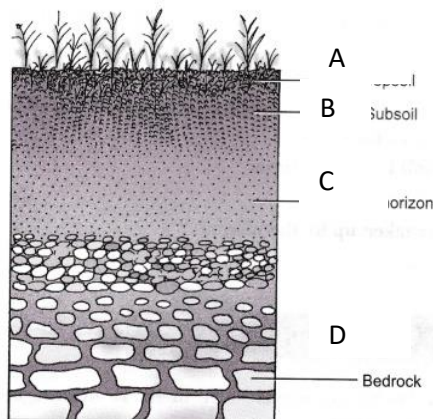
a solid



a gas

- Gases are easily compressed (squashed) but solids are **not** easily compressed. Explain why.
- Solids keep their own shape but gases fill the container they are put in. Explain why.
- Describe why water is a universal solvent

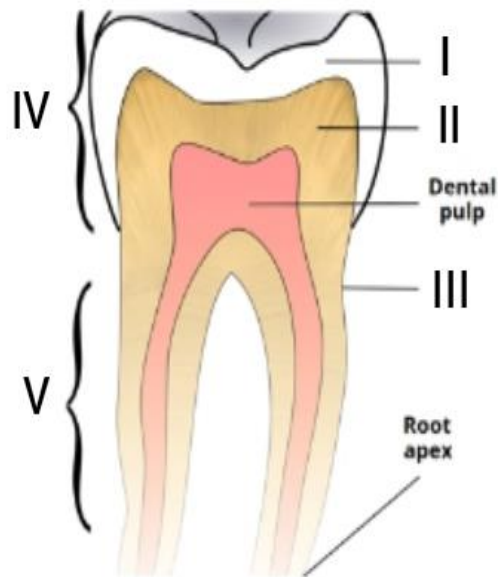
b. Study the diagram below and answer the questions



- What does the diagram above represent?
- Name the parts, A, B, C, and D
- State two properties of part B
-

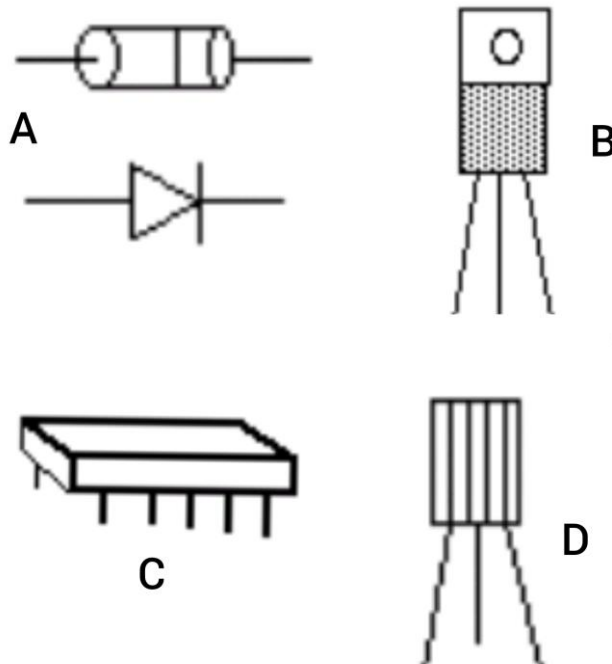
c. the diagram below and answer the questions

[Turn over



- i. What does the diagram represent?
- ii. Label the parts I to V
- iii. State the function of the part II
- iv. Name two diseases of the above

d. Study the diagrams and answer the questions



- i. What does the diagrams represent?
- ii. Label the parts A to D
- iii. State the function of the part A and D
- iv. Name the two types of D

[Turn over

Part II-60marks**Answer four questions in this section**

2. a. i. List three methods of separating mixtures
ii. Differentiate between atomic number and mass number
- b. Explain the following process in carbon cycle
- photosynthesis
 - respiration
 - burning
 - decay
- c. i. Explain
- a planet
 - the crust of a planet
- ii. Explain the reason why Jupiter does not support life
- d. i. Define ecological farming
- ii. Explain how farm animals help in crop production
3. a. i. Differentiate between food chain and food web
ii. State two components of food chain
- b. i. Explain the following
- renewable energy source
 - non-renewable energy source
- ii. List two examples each of renewable energy source and non-renewable energy source
- c. State four importance of water to man
- d. i. Define soil nutrients
ii. Differentiate between the types of soil nutrients
4. a. An element with atom X represented by ${}_{13}^{27}X$, find
- the mass numbers
 - the atomic number
 - the number of neutrons
- b. State three difference between heat and temperature
- c. i. What are ruminants?
ii. List three examples of ruminants
- d. i. State two signs of climate change
ii. State two effects of climate change

[Turn over

5. a. i. What is green economy?
ii. State two climate change adaptation measures that can be applied in the community
- b. i. Define magnetic field
ii. State three ways of making a magnet
- c. i. Define weathering of rocks
ii. State two agents of weathering of rocks
- d. i. Differentiate between cation and anion
ii. List one examples each of cation and anion
6. a. i. What are communicable diseases?
ii. List three examples of communicable diseases
- b. i. Differentiate between charging and discharging action of a capacitor
ii. State the function of a capacitor
- c. i. What are leguminous crops?
ii. List two examples of leguminous crops
- d. i. Explain the term change of state of matter
ii. List two forms of change of states of matter

PAPER 1 - ANSWER ALL QUESTIONS

1. Which of these does not consist of a transistor?
 - a. Computer
 - b. Television set
 - c. Pen
 - d. Sound system
 2. Transistors may be packaged as part of an integrated circuit called?
 1. Chip
 2. Sensor
 3. Vibrator
 4. Oscilloscope
 3. The negative lead of a transistor is called
 - d. Collector
 - e. Emitter
 - f. Base
 - g. Oscillator
 4. A transistor whose middle layer is P-Type semiconductor is called?
 - a. PNP transistor
 - b. NPN transistor
 - c. NPP transistor
 - d. PNN transistor
 5. In transistors if the base emitter junction is connected to a battery such that the N-type emitter is connected to the negative terminal then the base emitter junction is
 - a. Forward bias
 - b. Reverse bias
 - c. Middle bias
 - d. Extreme biased
 6. Kerosine and petrol are obtained from crude oil by
 - a. Distillation
 - b. Condensation
 - c. Filtration
 - d. Evaporation
 - e.
 7. Smoke is an example of a mixture of
 - a. Gases
 - b. Liquid in gases
 - c. Solid in liquids
 - d. Gas in water
 8. A mixture of sugar and water can be separated by
 - A. Filtration
 - B. Evaporation
 - C. Decantation
 - D. Distillation
 9. All the following substances are mixtures except
 - a. Blood
 - b. Air
 - c. Palm wine
 - d. Carbon dioxide
 10. Gin can be obtained from palm wine by
 - a. Condensation
 - b. Freezing
 - c. Sedimentation
 - d. Distillation
 11. Mixture of sand and water can be separated through
 - a. Filtration
 - b. Ionization
 - c. Condensation
 - d. Sedimentation
 12. A mixture of engine oil and water could best be separated by
 - a. Evaporation
 - b. Freezing
 - c. Decantation
 - d. Heating
 13. Which of the following processes should be carried out first when separating a mixture of sand and common salt?
 - a. Crystallization of the salt
 - b. Dissolution of the salt
 - c. Distillation of the crude oil
 - d. Filtration of the mixture
 14. What are the two main categories into which materials like powder, pebbles, salt, sugar, and water can be grouped?
 - a. Metals and Non-metals
 - b. Solids and Liquids
 - c. Organic and Inorganic
 - d. Transparent and Opaque
- [Turn over

15. When you combine sand and gravel, what type of mixture is formed?

- a. Homogeneous
- b. Heterogeneous
- c. Compound
- d. Solution

16. What observable conclusions can be drawn from a mixture of sand and water?

- a. It is homogeneous.
- b. It is heterogeneous.
- c. It forms a solution.
- d. Both a and c.

17. How do solutes and solvents differ based on their physical characteristics?

- a. Solute are always liquids.
- b. Solvents are always solids.
- c. Solute dissolve in solvents.
- d. Solvents dissolve in solutes.

18. Which of the following is an example of a solution?

- a. Sand and sugar mixture
- b. Sugar and salt mixture
- c. Fruit juice
- d. Mixture of oil and water

19. Which sub-atomic particle carries a positive charge?

- a. Proton
- b. Electron
- c. Neutron.
- d. Nucleus

20. What is the electrical charge of electrons?

- a. Positive.
- b. Negative
- c. Neutral
- d. Variable

21. How do the atomic number and mass number of an element differ?

- a. Atomic number is the number of protons; mass number is the sum of protons and neutrons.
- b. Atomic number is the sum of protons and neutrons; mass number is the number of protons.
- c. They are the same thing.
- d. Atomic number is the number of electrons; mass number is the number of protons.

22. What are the outer planets of the solar system?

- a. Mercury, Venus, Earth, Mars
- b. Jupiter, Saturn, Uranus, Neptune
- c. Pluto, Eris, Haumea
- d. Sun, Moon, Earth, Mars

23. What is unique about the composition of the outer planets?

- a. They are made entirely of rock and metal.
- b. They have a gaseous surface.
- c. They are rocky with liquid oceans.
- d. They are icy and have rings.

24. Why is there no life on Jupiter, Saturn, Uranus, and Neptune?

- a. Lack of water
- b. Extreme temperatures and pressure
- c. Lack of sunlight
- d. Presence of toxic gases

25. What is a suitable way to represent the outer solar system for discussion?

- a. A written report
- b. A poem
- c. A model
- d. A dance performance

26. What is the primary source of energy in the solar system?

- a. Sun.
- b. Jupiter
- c. Earth.
- d. Saturn

27. Where can you gather data on the number of males and females suffering from communicable diseases?

- a. Supermarkets.
- b. Medical centers
- c. Schools
- d. Parks

28. What is a primary reason to compile data on communicable diseases?

- a. To create art
- b. To determine possible causes
- c. To sell products
- d. To organize a party

[Turn over

29. Which of the following is NOT a common communicable disease?
- Hepatitis.
 - Diabetes
 - HIV
 - Measles
30. What is a key component of a presentation on communicable diseases?
- Poetry recitation
 - Identifying causes and prevention
 - Magic tricks
 - Dance performance
31. How can one minimize the occurrence of hepatitis based on the information gathered?
- Avoiding vaccination
 - Promoting good hygiene practices
 - Consuming raw meat
 - Smoking regularly
32. What is a common symptom of HIV?
- Coughing.
 - Fatigue
 - Broken bones.
 - Hair loss
33. Which of the following animals is likely to be classified as a ruminant?
- Rabbit
 - Cow
 - Cat
 - Dog
34. What type of feed is most suitable for herbivorous animals?
- High-protein pellets
 - Insects
 - Grass and hay
 - Fish food
35. In the context of animal nutrition, what is a primary function of carbohydrates?
- Muscle development

- Energy source
- 8 c) Bone growth
- Feather maintenance
36. Which nutrient is essential for the formation of strong bones and teeth in animals?
- Carbohydrates
 - Proteins
 - Vitamins
 - Minerals
37. Birds, such as chickens, often require additional supplementation of which nutrient for egg production?
- Calcium.
 - Iron
 - Vitamin C.
 - Fiber
38. The primary role of vitamins in animal nutrition is to:
- Provide energy
 - Support metabolic processes
 - Build muscle mass
 - Aid in digestion
39. What could happen if an animal is not provided with an adequate water supply?
- Increased energy levels
 - Improved digestion
 - Dehydration and health issues
 - Enhanced coat quality
40. What type of feed is most suitable for animals that are raised for their meat production?
- High-fiber feed
 - High-protein feed
 - Low-fat feed
 - High-carbohydrate feed

[Turn over