

**EDUCATION-NEWS CONSULT  
2024 BECE HOME MOCK**

**INTEGRATED SCIENCE 1 & 2**

**2 HOURS**

Name.....

Index Number.....



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**EDUCATION-NEWS CONSULT MOCK – 2024 EDITION FOR 2024 BECE**

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**SPECIAL PERFORMANCE BOOSTER – MOCK 3**

**JANUARY 2024**

**INTEGRATED SCIENCE**

**2 HOURS**

*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, 15 mins 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 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**

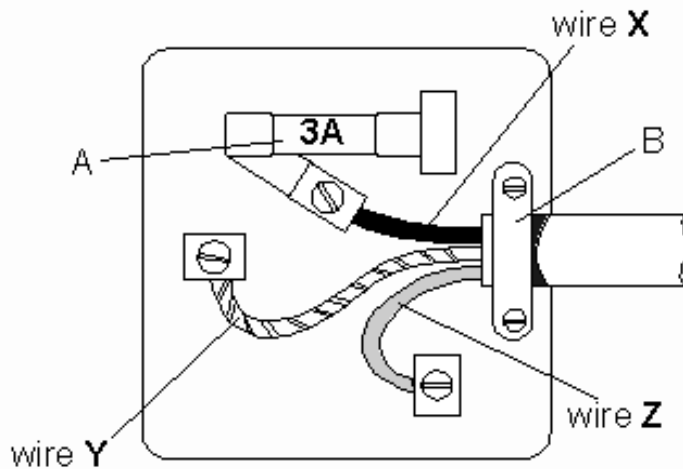
**SECTION B**  
**PRACTICALS –ATTEMPT ALL**

1. A. The table below gives the steps that were followed in an experiment to show that light is necessary for photosynthesis.

Stages to show that light is necessary for photosynthesis
i. Fresh green leaf which remains attached to the parent plant is selected
ii. Both surfaces of the leaf are covered with strips of black. The tip and base of the leaf remain exposed to sunlight.
iii. The experiment is set up early in the morning before sun rises.
iv. Later, in the afternoon, the leaf is plucked off the plant.
v. The strips of the black paper are removed and the leaf is immediately tested for starch.

- i. Why should the fresh green leaf be still attached to the parent plant while conducting the experiment?
- ii. What was the role of the strips of black paper in the experiment?
- iii. Why was the experiment set up in the morning before sunrise?
- iv. What was the role of the uncovered part of the leaf?

- B. Study the diagram below carefully and answer the questions that follow.



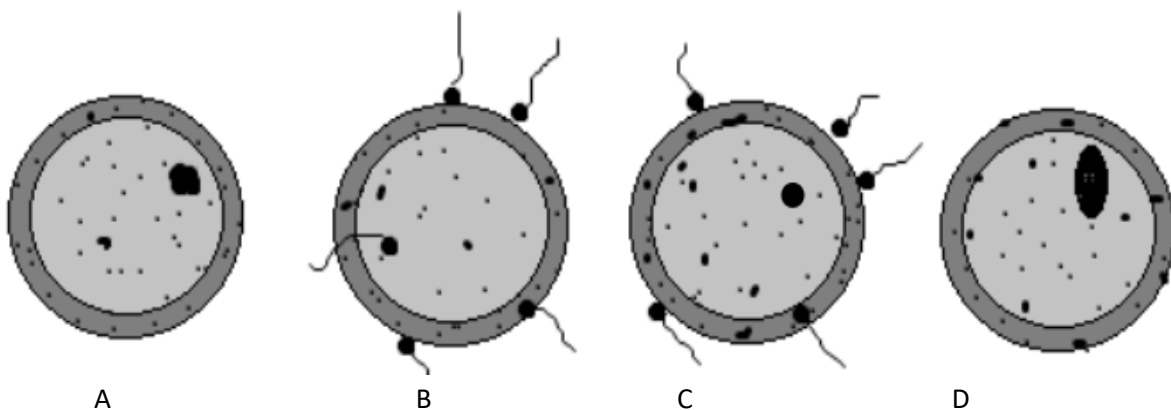
- i. Identify the parts labelled A, B, wire X, wire Y and wire Z.
- ii. State the colour of each of the labelled wires in modern electrical appliances.
- iii. State the function of the part labelled A
- iv. What is the function of the diagram above?

C. A student performed tests on three food substances A, B and C. The table below represents the test and observations made by the student. Study it carefully and answer the questions that follow.

Food substance	Test	Observation
A	Few drops of Fehling's solution was added to A and the mixture boiled	Colour of mixture changed from blue to brick-red
B	Few drops of freshly prepared iodine solution was added to B	The iodine solution changed to blue-black
C	Millon's reagent was added to C and the mixture heated	White precipitate was formed which turns red on heating

- Identify the food substances A, B and C
- Name one source each of the food substances A, B and C
- State the importance of each of the food substances to the body.
- What happens to a person who lacks food substance C in diet?

D. Given below are diagrams showing different stages in the process of fertilization of an egg in female reproductive tract. Study the diagrams and answer the questions that follow.



- Arrange the letters given below each diagram in a logical sequence to show the correct order in the process of fertilization.
- Where in the female reproductive does the process normally take place?
- What is the biological term for the product of fusion?
- State an observation made in each stage of the logical sequence of the process.

## PART II

**Answer four questions only from this part.**

- 2.a. Define saturated solution
- b. State the solvent for the following soluble substances
- i. rubber      ii. oil paint      iii. Emulsion paint      iv. Alcohol
- c.i Explain osmosis
- ii. State two factors affect the rate of osmosis.
- d.i. Give two differences between self-pollinated and cross pollinated flower.
- ii. State three characteristics of enzymes.
- 3.a.i. Define weathering.
- ii. State three differences between sandy soil and clayey soil.
- b.i. Write down two components of the circulatory system in human.
- ii. What is blood clotting.
- c.i. State the law of refraction of light.
- ii. Give two effects of refraction of light.
- d. Define the following
- i. Centripetal force
- ii. Centrifugal force
- 4.a.i. Explain the term viscosity
- ii. State two properties of viscous liquids.
- b.i. What are birth control methods?
- ii. Mention the permanent birth control methods.
- c. Describe how you would test for starch in a leaf.
- 5.a.i. Distinguish between soil depletion and soil erosion.
- ii. State three factors of soil depletion.
- b.i. Mention any two groups of simple machine.
- ii. What is a lever?
- c. State one function each of the following.
- i. Xylem cells      ii. Phloem cells
- d. Define Twins.
- 6.a. State the symbols of the following elements.
- i. Mercury
- ii. Silver
- iii. Tin
- b.i. Tabulate two differences between colloid and Emulsion.
- ii. Describe briefly how a mixture of salt and powdered sulphur could be separated.
- c. A mango of weight 72N hangs 12.3m above the ground.
- i. What energy is possessed by the mango?
- ii. Calculate the value of the energy.

## SECTION A

- Which of the following factors affect the rate of diffusion?  
I. particle size    II. type of fluid    III. temperature  
A. I and II only    B. III only    C. I and III only    D. I, II and III
- Nucleons consist of ....  
A. electrons, protons and neutrons    B. neutrons and electrons  
C. electrons and protons    D. protons and neutrons
- An atom of an element Y has 11 protons and 12 neutrons. What is the number of electrons?  
A. 12    B. 11    C. 23    D. 1
- The following animals belong to the same community except.....  
A. Salmon    B. Octopus    C. Tilapia    D. Herring
- Kerosene and petrol are obtained from crude oil by.....  
A. Distillation    B. Condensation    C. Filtration    D. Evaporation
- Which of the following ways of treating water makes the water soft?  
A. Adding alum    B. Adding washing soda    C. Chlorination    D. Filtering
- The unit for electric charge is .....
- Porcelain is an/a example of .....
- The part of a cocoyam which is used in propagation is the .....
- Blood in the urine is a symptom of .....
- Ringworm is a skin disease which is caused by.....
- A man did 75 J of work by lifting a 50 N load from the floor onto a shelf. Calculate the height of the shelf.
- Weeds on a school farm can be controlled by .....
- The practice that excess branches of growing plants are removed is called....

15. The feeling of soil between fingers is used to determine the.....  
A. Texture of the soil                      B. Drainage of the soil  
C. Capillary of the soil                      D. Water holding capacity of the soil
16. Water drains faster through sand than clay because.....  
A. Sand particles are rougher                      B. Sand contains more air space  
C. Clay particles are smoother                      D. Clay particles are bigger
17. A meter rule can be used for measuring the ....  
A. Volume of a liquid                      B. Area of a ball  
C. Length of a table                      D. Diameter of a wire
18. The basic unit of a living organism is called.....  
A. Cell              B. Tissue              C. Organ              D. Nucleus
19. The last stage of reproduction is .....  
A. Embryo              B. Pregnancy              C. Fertilization              D. Birth
20. Steel is an alloy made of .....  
A. Iron and carbon                      B. Zinc and copper  
C. Iron and zinc                      D. Brass and zinc
21. A chemical that can be used to test for the presence of protein in food substances is ....  
A. Benedict's solution                      B. Fehling's solution  
C. Iodine solution                      D. Millon's solution
22. A solution which can dissolve more solute at a given temperature is known as.....  
A. Saturated solution                      B. Aqueous solution  
C. Unsaturated solution.                      D. Dilute solution
23. What is the atomic number of magnesium? A. 13              B. 12              C. 18              D. 6
24. Pure water is ....A. Bitter              B. Tasteless              C. Sugary              D. Salty
25. The part of the soil that is most important for growth of plant is....  
A. Sand              B. Clay              C. Humus              D. Silt
26. Air is an example of ....  
A. Gas-in-gas mixture.                      B. Liquid-in-liquid mixture  
C. Solid-in-solid mixture                      D. Solid-in-liquid mixture
27. A positively charged ion is called.... A. Anion              B. Cation              C. Neutron              D. Protons

28. A group of atoms of the same or different elements chemically combined is called.....  
A. Ion      B. Molecule      C. Atom      D. Element
29. The process by which naphthalene ball placed in a box gets smaller in size is ...  
A. Sublimation.      B. Condensation      C. Melting      D. Evaporation
30. Which of the following farming systems involves the cultivation of crops and rearing of animals?  
A. Mixed cropping      B. Pastoral farming.      C. Mixed farming.      D. Crop rotation
31. Which part of a tilapia is used to control yawing?  
A. Scales.      B. Pelvic and anal fins.      C. Pectoral and dorsal fins      D. Dorsal and anal fins
32. An organism which is fed on in an ecosystem is called.....  
A. Predation      B. Prey      C. Predator.      D. Anteater
33. Which of the following receives a fertilized egg from the fallopian tube?  
A. Ovary      B. Cervix      C. Uterus      D. Uterus
34. The release of matured egg from the ovary into the fallopian tube is termed ....  
A. Mating.      B. Ovulation.      C. Menstrual cycle.      D. Copulation
35. Production of breast milk for feeding a baby is termed.....  
A. Lactation.      B. Prolactin.      C. Breastfeeding.      D. Implantation
36. One disease that affect the nervous system of human is...  
A. Filariasis.      B. Measles.      C. Poliomyelitis.      D. Typhoid
37. Which of the following life processes leads to the release of energy?  
A. Absorption.      B. Digestion of food.      C. Photosynthesis.      D. Respiration
38. Mineral salts in dead organisms are released into the soil by a process called....  
A. Decomposition.      B. Diffusion.      C. Leaching.      D. Osmosis
39. The male reproductive part of a flower is ....  
A. Stalk.      B. Receptacles.      C. Carpel      D. Stamen
40. Which of these organs in humans releases carbon dioxide as a waste product?  
A. Kidney.      B. Liver.      C. Lung.      D. Skin