

DO NOT TURN OVER THIS PAGE UNTIL YOU ARE TOLD TO DO SO
YOU WILL BE PENALIZED SEVERELY IF YOU ARE FOUND LOOKING AT THE NEXT PAGE BEFORE YOU ARE TOLD TO DO SO

**PAPER 1
 OBJECTIVE TEST**

45 minutes

Answer all the questions on your Objective Test answer sheet.

1. Use 2B pencil throughout
2. On the pre-printed answer sheet, check that the following details are **correctly** printed: Your **surname** followed by your other names, the *Subject Name*, your *Index Number*, *Centre Number* and the *Paper Code*.
3. In the boxes marked Candidate Number, Centre Number and Paper Code, **reshade** each of the shaded spaces.
4. An example is given below. This is for a candidate whose name is Seyram BABANAWO. Her index number is 772384188 and she is writing the examination at Centre Number 77234.

**BEST BRAIN EXAMINATION KONSORTIUM
 SPECIAL PRIVATE MOCK FOR BECE CANDIDATES
 OBJECTIVE ANSWER SHEET.**

CANDIDATE NAME: SEYRAM BABANAWO	SUBJECT: INTEGRATED SCIENCE
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- | | |
|---|---|
| 1. Use HB Pencil Press firmly
2. Answer each question by choosing one letter and then, shade through the letter chosen like this
[A] [B] [C] [D] [E] | First mark completely
4. If only four alternative answers are given for each question, ignore the letter E
5. Your question paper may have fewer than 60 Questions. |
|---|---|

CANDIDATE NUMBER								
7	7	2	3	8	4	1	8	8
[0]	[0]	[0]	[0]	[0]	[0]	[0]	[0]	[0]
[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]
[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]
[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]	[3]
[4]	[4]	[4]	[4]	[4]	[4]	[4]	[4]	[4]
[5]	[5]	[5]	[5]	[5]	[5]	[5]	[5]	[5]
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CENTRE NUMBER				
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PAPER CODE			
4	5	1	0
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[1]	[1]	[1]	[1]
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[7]	[7]	[7]	[7]
[8]	[8]	[8]	[8]
[9]	[9]	[9]	[9]

For Supervisors Only

if candidate is absent shade this space

Answer **all** the following questions.

Each question is followed by **four** options lettered **A** to **D**. Find out 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. An example is given below.

The element with the chemical symbol **Si** is

- A. Silver
- B. Silicon
- C. Selenium
- D. Sodium

The correct answer is Silicon, which is lettered **B** and therefore answer space **B** would be shaded

A

B

C

D

Think carefully before you shade the answer space.

Erase completely any answer you wish to change.

Now answer the following questions.

1. Faeces produced after digestion is temporarily stored in the
 - A. large intestine.
 - B. anus.
 - C. rectum.
 - D. small intestine.
 2. For current to flow in an electric circuit
 - I. a battery must be present.
 - II. a bulb must be connected to the circuit.
 - III. the circuit should be open.
 - IV. there must be connecting wires.
 - A. I, II, and III only
 - B. I, and IV only
 - C. I, II, III and IV.
 - D. I only.
 3. Calculate the volts across a wire of resistance 4 Ohms if 3 amperes of current passes through
 - A. 7.00V.
 - B. 1.25 V.
 - C. 12.00V.
 - D. 0.75V.
 4. The diagram below is an illustration of a simple
 - A. electrical circuit.
 - B. oscillator circuit.
 - C. magnetic compass.
 - D. electromagnetic field.
-
5. Which of the following is **not** true of the interdependence between plants and animals?
 - A. Plants produce oxygen which is used by animals for respiration.
 - B. Animals give out carbon dioxide which plants use for photosynthesis.
 - C. Plants depend on animal droppings for food.
 - D. Animals depend on plants for food.
 6. Which of the following is an unhygienic practice?
 - A. Drinking from the same tap water with your brother.
 - B. Using a brother's towel.
 - C. Drinking water directly from a sachet.
 - D. Carrying waakye in green leaves.
 7. Which of the following is an artificial source of light?
 - A. Biogas
 - B. The sun
 - C. Deep sea fishes
 - D. Fire crackers

8. High salt intake exposes us to the incidence of
 A. diabetes.
 B. stroke.
 C. dental disorders.
 D. indigestion
9. An atom X is represented as ${}_{15}^{33}\text{X}$. How many neutrons are in the atom X?
 A. 33
 B. 15
 C. 48
 D. 18
10. The use of an emitter in a transistor is to
 A. supply negative charges.
 B. pull the electrons from emitter.
 C. allow current to flow to the base.
 D. supply positive charges.
11. A metal expands when there is
 A. an increase in heat energy.
 B. an increase in number of atoms.
 C. a decrease in potential energy.
 D. a decrease in number of atoms.
12. Shadow formation shows that light rays
 A. can be diffracted.
 B. travel in straight lines.
 C. can be refracted.
 D. can be reflected.
13. Constipation can be prevented by
 A. eating lots of carbohydrate.
 B. eating regularly.
 C. fasting.
 D. drinking lots of sugary juices.
14. One of the structures which is part of the digestive system of humans is the
 A. trachea.
 B. lungs.
 C. rectum.
 D. Uterus.
15. Which of the following describes a first class lever?
 A. The load is between the effort and pivot
 B. The pivot is between the effort and the load
 C. The effort is between the pivot and the load
 D. The load arm is equal to the effort arm.
16. How many different elements are present in the compound $\text{Ca}(\text{OH})_2$?
 A. 1.
 B. 2.
 C. 3.
 D. 4.
17. Gaps are left in the joints of railway lines
 A. to check over speeding.
 B. for protection against the sun.
 C. to create room for bolts and knots.
 D. to make room for the expansion of metals.
18. A common feature of a plant cell is that it
 A. contains a few large vacuoles.
 B. is walled by a cell membrane only.
 C. does not have a definite shape.
 D. does not have a nucleus.
19. Which of the following is acidic?
 A. Soapy water
 B. Salt solution
 C. Citrus juice
 D. Sugar solution.
20. A non-luminous object can be seen when light falling on it is
 A. absorbed.
 B. dispersed.
 C. refracted.
 D. reflected.
21. Hydrochloric acid is naturally produced in the
 A. laboratory.
 B. hospital.
 C. stomach.
 D. grape fruits.
22. One effect of hazards is
 A. malnutrition.
 B. injury.
 C. HIV/AIDS.
 D. teenage pregnancy.
23. Which of the following produces rust?
 A. Iron + water + oxygen.
 B. Iron + water + carbon dioxide.
 C. Iron + air + carbon dioxide.
 D. Iron + water + nitrogen.
24. The two upper chambers of the heart are
 A. right atrium and left atrium.
 B. right ventricle and left ventricle.
 C. right atrium and right ventricle.
 D. left ventricle and right atrium.

Turn over

25. Biting and cutting are the functions of the
 A. canines.
 B. incisors.
 C. molars.
 D. premolars.
26. The crown and root of the tooth meet at the
 A. dentine.
 B. neck.
 C. pulp cavity.
 D. periodontal membrane.
27. The following are length measuring devices **except**
 A. meter rule.
 B. overflow can.
 C. micrometer screw gauge.
 D. vernier calipers.
28. A physical change occurs when there is
 A. combustion of petrol in car engines.
 B. sublimation of iodine crystals.
 C. boiling of egg.
 D. frying of egg.
29. One of these **cannot** be considered as a lever.
 A. screw.
 B. crowbar.
 C. wheel barrow.
 D. scissors.
30. The chemical formula of methane is
 A. NH_3
 B. NH_4
 C. CH_3
 D. CH_4 .
31. The embryo of a seed consists of the
 A. plumule and cotyledons.
 B. plumule and radicle.
 C. radicle and cotyledons
 D. plumule, radicle and cotyledons.
32. In gardening, the rake is mainly used for
 A. harvesting.
 B. leveling.
 C. making moulds.
 D. turning compost.
33. Which part of the respiratory system is an external organ?
 A. Trachea.
 B. Lungs.
 C. Nose.
 D. Alveoli.
34. An example of a hazardous substance is
 A. carbon (II) oxide.
 B. carbon (IV) oxide.
 C. milk of magnesia.
 D. sodium chloride.
35. Dispersion of light occurs by
 A. magnification.
 B. diffraction.
 C. refraction.
 D. reflection.
36. The function of the lungs is to
 A. keep water in the body.
 B. absorb oxygen from the body.
 C. absorb carbon dioxide from the blood.
 D. keep body temperature constant.
37. One use of technology to industrialization is
 A. environmental pollution
 B. reduction in skilful labour
 C. provision of machinery
 D. increase in cost of production of goods.
38. Which of the following activities involves conversion of energy from light to electrical?
 A. Dry cell in use
 B. Electric stove in use
 C. Solar panel in use
 D. Hammering a piece of metal
39. The efficiency of a machine is 75% means
 A. 25% of energy input is utilized.
 B. 25% of energy input is wasted.
 C. 25% of energy output is utilized.
 D. 25% of energy output is wasted.
40. The work done in lifting a load of 150N from the floor to a shelf 1.5m high is
 A. 225J.
 B. 75J.
 C. 750J.
 D. 7500J.

END OF PAPER

This paper is in two sections: A and B. Answer Question 1 in section A and any other four questions in section B.

Answer all the questions in your answer booklet.

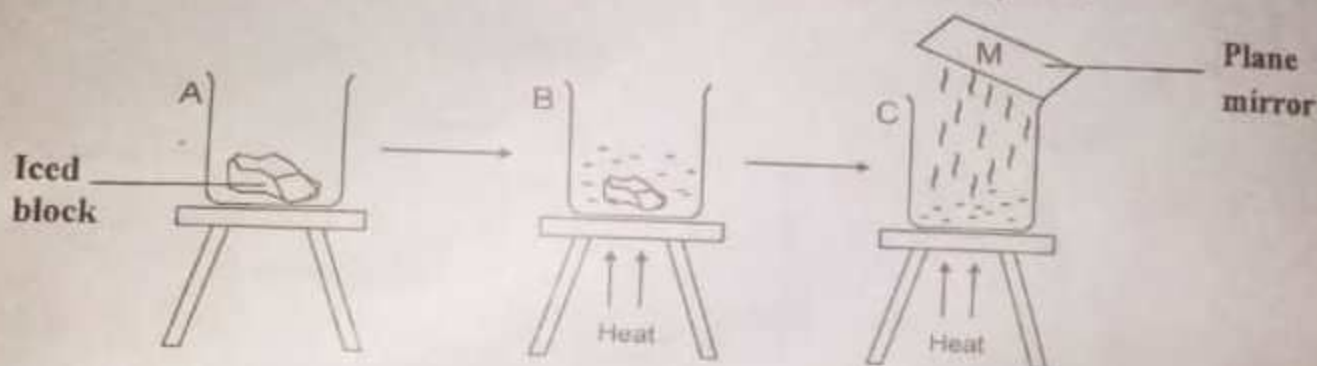
Credit will be given for clarity of expression and orderly presentation of material.

SECTION A

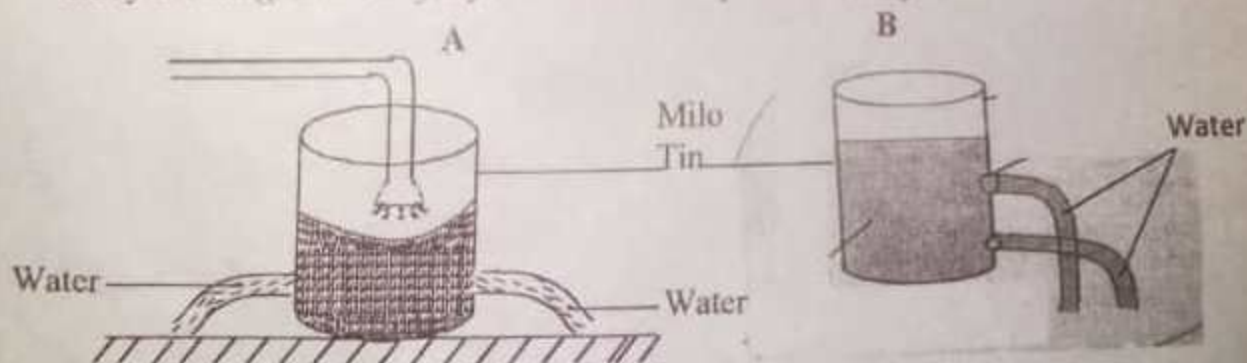
[40 marks]

Answer all of Question 1

1. (a) The set-up below was used to demonstrate some changes in states of matter. Study the set-up carefully and answer the questions that follow.

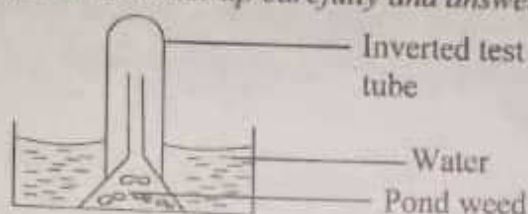


- (i) Explain the three changes of state that occur in the set-up above. [3 marks]
 (ii) What will you see on M and why? [2 marks]
 (iii) State three factors which affect the process at stage B. [3 marks]
 (iv) Mention two benefits of the process occurring at stage B. [2 marks]
- (b) In the diagrams A and B below, two holes were made in each of the two cylindrical tins after which they were filled with water. Study the diagrams carefully and answer the questions that follow.

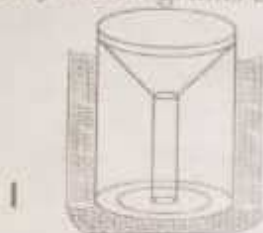


- (i) Name the phenomenon being investigated by the set ups above. [2 marks]
 (ii) What observation is made in set up A and Set up B, respectively? [2 marks]
 (iii) What conclusion can be drawn from the observations in A and B? [2 marks]
 (iv) State two factors which affect the phenomenon being investigated. [2 marks]
 (v) Give one useful application of the phenomenon being investigated. [2 marks]

- (c) Below is an experiment to demonstrate one of the products of photosynthesis. Study the experimental set-up carefully and answer the questions that follow.



- (i) What is observed when the set-up is left in sunlight for a while? [2 marks]
 (ii) Explain your observation in (c) (i) above. [2 marks]
 (iii) Name the gas produced in the inverted test tube. [2 marks]
 (iv) Mention the **four** factors needed for photosynthesis. [2 marks]
 (v) Give **four** benefits of photosynthesis in life. [2 marks]
- (d) The diagrams below are illustrations of some weather instruments. Study the diagrams carefully and answer the questions that follow



- (i) Identify each of the instruments shown above as I and II. [2 marks]
 (ii) Give the element of weather measured by each of I and II. [2 marks]
 (iii) State **three** ways in which the element measured by using I is important in agriculture. [3 marks]
 (iv) List **three** benefits that the nation derives from agriculture. [3 marks]

SECTION B

[60 marks]

Answer **four** questions **only** from this section

2. (a) (i) What is *circulation of blood*? [2 marks]
 (ii) Describe the role of the heart in blood circulation. [2 marks]
 (iii) Mention **four** uses of blood to the body. [2 marks]
- (b) A simple machine moves a load of 20N through a distance of 2m. If it uses an effort of 25N which moves through a distance of 4m, calculate its
 (i) work input;
 (ii) work output;
 (iii) efficiency. [3 marks]
- (c) Write down the chemical formula of each of the following compounds:
 (i) Calcium hydroxide;
 (ii) Copper (II) oxide; [2 marks]
- (d) (i) Name **two** organisms which cause crop diseases. [2 marks]
 (ii) List **four** methods of transmission of crop diseases. [2 marks]

Turn over

3. (a) (i) Distinguish between *land rotation* and *crop rotation*. [2 marks]
 (ii) Give **two** advantages of crop rotation over land rotation. [2 marks]
- (b) State **two** methods each of controlling mosquitoes at the
 (i) pupal stage; [2 marks]
 (ii) adult stage. [2 marks]
- (c) (i) Explain how ions are formed from atoms. [1 mark]
 (ii) Write the chemical formulae for the following ions:
 (α) oxygen ion;
 (β) calcium ion; [2 marks]
- (d) Explain the role of the following features in a thermos flask:
 (i) Presence of cork;
 (ii) Absence of medium;
 (iii) Presence of vacuum
 (iv) Shiny silvered surfaces of the double wall. [4 marks]
4. (a) (i) Identify **four** benefits of science and technology to human life. [2 marks]
 (ii) Mention **four** dangers posed by science and technology to life. [2 marks]
- (b) (i) Identify **four** living organisms found in the soil. [2 marks]
 (ii) State **four** benefits of soil living organisms. [2 marks]
- (c) (i) State **two** roles played by green plants in a food chain. [2 marks]
 (ii) Identify **two** factors affecting living things in aquatic habitats. [2 marks]
- (d) Name the **three** parts of a transistor and give the use of each. [3 marks]
5. (a) (i) Give **four** uses of the human tooth. [2 marks]
 (ii) State **two** ways of preventing dental disorders. [2 marks]
- (b) Explain the importance of each of the following devices in household wiring:
 (i) fuse;
 (ii) earthing;
 (iii) switch. [3 marks]
- (c) Write a word equation for each of the following reactions:
 (i) $\text{Ca(OH)}_2 + 2\text{HCl} \rightarrow \text{CaCl}_2 + 2\text{H}_2\text{O}$ [2 marks]
 (ii) Reaction between magnesium metal and hydrochloric acid. [2 marks]
- (d) (i) Give **two** symptoms of the swollen shoot disease in cocoa plant. [2 marks]
 (ii) State **two** ways to control the swollen shoot disease in cocoa plant. [2 marks]
6. (a) Give **two** uses of protein to the human body. [2 marks]
- (b) Explain how the following are formed:
 (i) Shadow;
 (ii) Eclipse of the sun;
 (iii) Eclipse of the moon; [6 marks]
- (c) Give **three** reasons why the burning of wood is a chemical change. [3 marks]
- (d) Give **two** reasons each why:
 (i) loamy soils support the growth of most crops; [2 marks]
 (ii) sandy soil cannot support good crop growth. [2 marks]

END OF ESSAY TEST