



Centre Number	Candidate Number

MINISTRY OF EDUCATION AND HUMAN RESOURCE DEVELOPMENT

SOLOMON ISLANDS YEAR 9 EXAMINATION

2022

SCIENCE

QUESTION AND ANSWER BOOKLET

THURSDAY 17TH NOVEMBER 9:00 AM

**TIME: 1 HOUR 30 MINUTES
PLUS 10 MINS. READING TIME.**

This Exam Paper consists of THREE (3) sections. **ATTEMPT ALL QUESTIONS**

	MARKS	TIME
SECTION A: 15 Multiple Choice Questions	15	40 minutes
SECTION B: 5 Short Answer Questions	40	60 minutes
SECTION C: 4 Long Answer Questions	20	50 minutes
TOTAL:	75	150 minutes

INSTRUCTIONS

1. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
2. WRITE BOTH YOUR CENTRE NUMBER AND CANDIDATE NUMBER IN THE BOX PROVIDED AT THE TOP RIGHT HAND CORNER OF THIS PAGE AND THE BACK OF THIS BOOKLET.
3. BEFORE YOU BEGIN EACH PART, READ THROUGH THE READ THROUGH THE INSTRUCTIONS CAREFULLY.
4. DO NOT USE CORRECTION FLUID.
5. MOBILE PHONES ARE **NOT** ALLOWED IN THE EXAMINATION ROOM.
YOU MUST HAND THIS BOOKLET TO THE SUPEVISOR AT THE END OF THIS EXAMINATION.
6. CHECK THAT THIS BOOKLET CONTAINS PAGES **2 - 17** IN THE CORRECT ORDER AND THAT NONE OF THESE PAGES ARE BLANK. PAGE **16** HAVE BEEN LEFT BLANK DELIBERATELY.
YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

THIS BOOKLET CONTAINS 17 NUMBERED PAGES.

SECTION A: MULTIPLE CHOICE QUESTIONS**(15 MARKS)**

ANSWER ALL THE QUESTIONS IN THIS SECTION. WRITE YOUR BEST ANSWERS IN THE BOXES PROVIDED AT THE END OF THIS BOOKLET. EACH QUESTION IS WORTH ONE (1) MARK

1. There are nine planets known in our solar system. The position of Jupiter in the solar system is;
 - A. after Pluto
 - B. before Earth
 - C. before Venus
 - D. before Saturn

2. The portion of the earth that contain thick layer of rock minerals and other metal such as iron and magnesium is the
 - A. Crust
 - B. Mantle
 - C. Outer core
 - D. Inner core

3. Which of the following elements below is an example of the alkali earth metals?
 - A. Na
 - B. Mg
 - C. Fe
 - D. Al

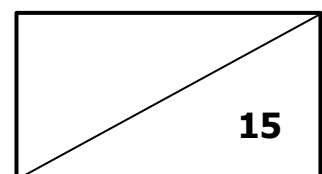
4. The periodic table is consist of **Groups** and **Periods**. Group in the Periodic table determines the number of;
 - A. shells of an atom.
 - B. zero charges in the nucleus.
 - C. electrons on the outer most shell.
 - D. positively charge particles in the nucleus.

5. Atom **X** react with atom **Y** to form compound **X₂Y₃**. Atoms **X** and **Y** are likely to be;
 - A. Sodium and oxygen.
 - B. Calcium and chlorine.
 - C. Aluminum and oxygen.
 - D. Magnesium and oxygen.

6. The type of energy conversion (**Potential energy → Kinetic energy → Mechanical energy → Electrical energy**) is belong to;
- A. Solar power.
 - B. Wind energy.
 - C. Hydroelectricity.
 - D. Geothermal energy.
7. Gold in its natural state is not pure. Gold is extracted from its ore called
- A. Pyrite
 - B. Bauxite
 - C. Hematite
 - D. chalcopryrite
8. The rock that is consist of different types of rock particles cemented together is known as the
- A. Quartz
 - B. Igneous rock
 - C. Sedimentary rock
 - D. Metamorphic rock
9. Metals are widely used in construction work. Some metals conduct electricity well than others. Which of the metals below is the BEST conductor of electricity?
- A. Zinc
 - B. Copper
 - C. Aluminum
 - D. Magnesium
10. The two important conditions required for iron rusting are?
- A. unlight and air
 - B. Water and oxygen
 - C. Moisture and nitrogen
 - D. Rain and carbon dioxide gas

11. An example of abiotic (non-living) factor in the forest ecosystem is
- A. Bird
 - B. Plant
 - C. Insect
 - D. Temperature
12. One benefit of using contraception method in family planning is;
- A. fertilization.
 - B. irregular bleeding.
 - C. promote healthy babies.
 - D. increase population pressure.
13. Eutrophication refers to nutrient enrichment in water that could leads to algal bloom. An example of a nutrient that can cause algal bloom is
- A. Lead
 - B. Zinc
 - C. Copper
 - D. Phosphate
14. The hormone that is responsible for breast enlargement and hip broadening in female is called
- A. Oestrogen.
 - B. Testosterone.
 - D. Luteinizing Hormone (LH).
 - C. Follicle Stimulating Hormone (FSH).
15. Which is NOT true about the process of photosynthesis in plants?
- A. Sunlight is required for photosynthesis.
 - B. Oxygen is the waste product of photosynthesis.
 - C. Carbon dioxide gas is the by-product of photosynthesis.
 - D. Chlorophyll is the green pigment in leaves used for photosynthesis.

SECTION A:



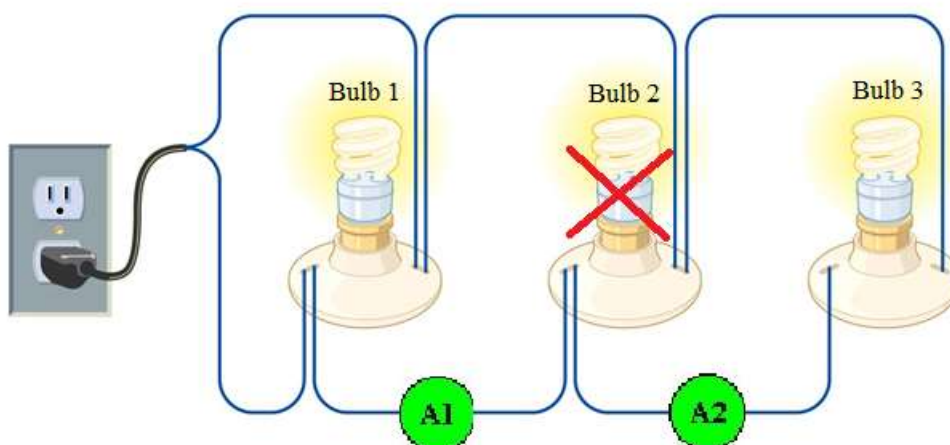
SECTION B: SHORT ANSWER QUESTIONS

(40 MARKS)

THIS SECTION IS WORTH 40 MARKS. ANSWER ALL QUESTIONS IN THE SPACES PROVIDED IN THIS BOOKLET.

Electricity and light

Refer to the circuit diagram below to answer questions (i-ii) that follow.



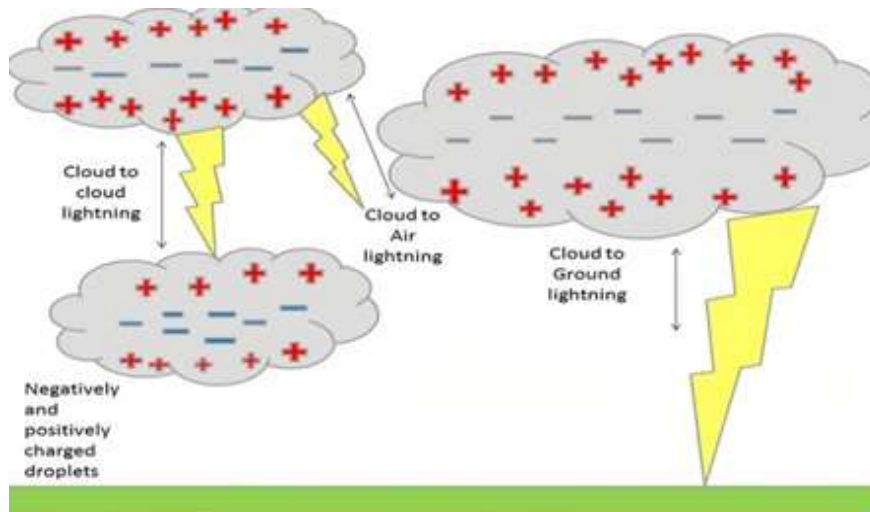
16. i. What would happen to bulbs **one** and **three** if bulb number two is broken as indicated in the diagram with red X? Suggest reason for your answer.

(2 marks)

- ii. All lighting systems in our homes are connected in parallel circuit. Explain what will happen if all the lighting systems in our homes are connected in a series circuit.

(3 marks)

17. Study the lightning diagram below and answer questions (i and ii) that follow.



i. Describe the term static electricity.

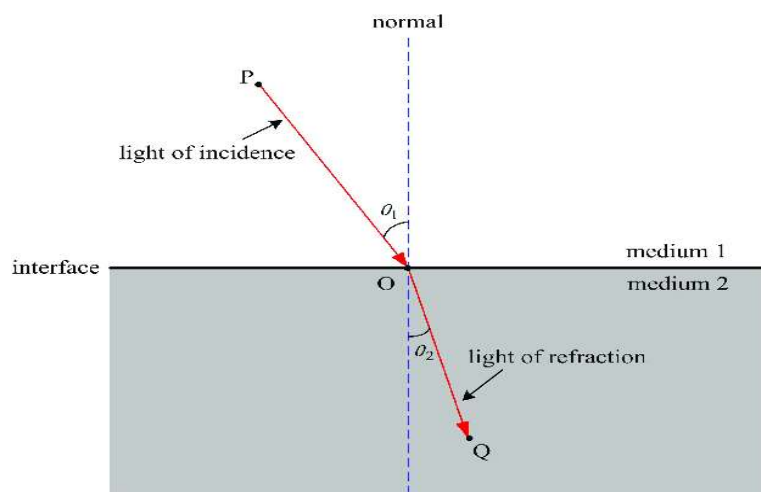
(2 marks)

ii. Using your understanding on the concept of static electricity, describe what happen in the clouds and how does lighting happen.

(3 marks)

Light refraction

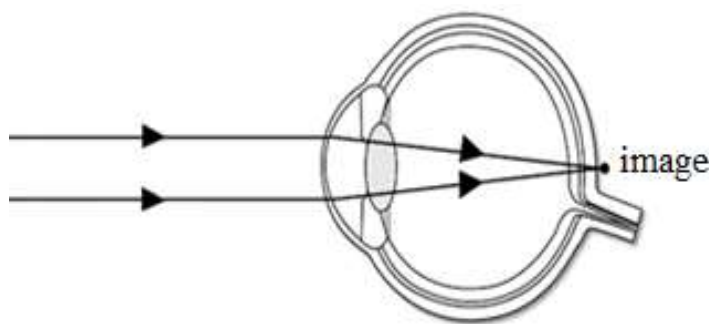
18. Study the diagram of light refraction below to answer the question that follow.



Explain why does light ray in medium 1 bends when it enters medium 2.

(2 marks)

19. Joy always complain about her eyes blurry vision. Below is the specialist description on the cause of her blurry vision. Carefully study the diagram below to answer the question that follow.



Explain how you would help correct her eye problem.

(Hint: Please mention the vision problem and the type of lens to use).

(3 marks)

Human body (Circulatory System)

20. Explain the function of right and left atrium of the heart (note: please include oxygenated and deoxygenated blood in your explanation).

(3 marks)

21. Muscles co-ordinate the movement of the body. Two muscle systems control the movement of arm forward and backward. Describe the actions of the biceps and triceps muscles when you move your arm backward.

(2 marks)

22. The duodenum in the small intestine plays a major role in human digestive system. Describe the actions of the duodenum muscles when the food particles are moving through it.

(2 marks)

Considering Future - Environmental concern

23. Using your knowledge on the study of mangrove and forest ecosystems and answer questions (a & b) that follow.

- (a) Explain the importance of mangrove system in terms of sea level rise and cyclone activities.

(2 marks)

- (b) Gold Ridge Mining had been operated for years in the past. It has advantages and disadvantages. Identify TWO (2) possible environmental problems associated with Gold Ridge mining operations.

(i) _____

(ii) _____

(2 marks)

A. RESOURCES

Origin of elements

Use your understanding of the first elements of the periodic table to answer questions (i and ii) that follow.

24. i. Sketch the atomic structure of Magnesium atom in the space provided below.



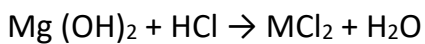
(2 marks)

- ii. Explain the position of aluminum in terms of Group and Period in the periodic table

(2 marks)

B. Mineral resources

- i. Write the balance chemical equation for reaction (i and ii) below



(3 marks)

- ii. $\text{Na} + \text{O}_2 \rightarrow \text{Na}_2\text{O}$

(2 marks)

C. Energy Resources

One way to reduce climate change and its negative impacts is through forest conservation and reforestation. This method will increase the absorption of greenhouse gas and the rate of photosynthesis.

- i. Explain how carbon dioxide gas contributes to climate change.

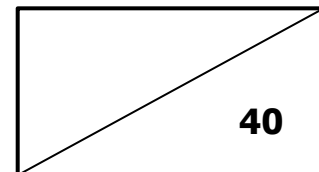
(3 marks)

To help reduce climate change and its effects, methods such as renewable energy resources are widely used today.

- ii. Describe ONE (1) common method of energy resources that Solomon Islands used to reduce carbon emission in the air.

(2 marks)

SECTION B:



SECTION C: LONG ANSWER QUESTIONS

(20 MARKS)

THIS SECTION IS WORTH 20 MARKS. ANSWER ALL QUESTIONS IN THE SPACES PROVIDED.

Q.25. THE HUMAN SYSTEMS

Reproduction and growth

- i. Differentiate between the two terms, vasectomy and female sterilization/tubal ligation in family planning.

(3 marks)

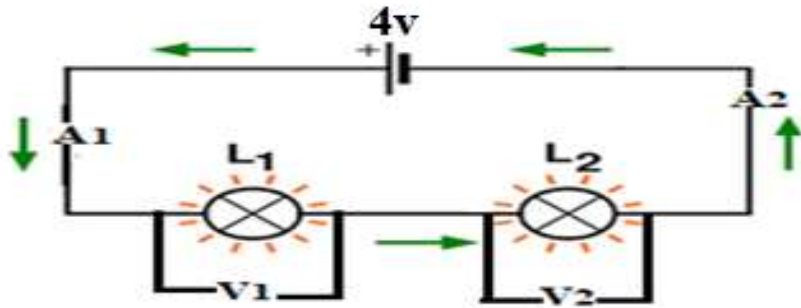
- ii. Explain ONE (1) **disadvantage** of contraceptive methods.

(2 marks)

Q.26. ELECTRICITY AND LIGHT

Electricity and application

Use the diagram of the **series circuit below** to answer the question that follow.



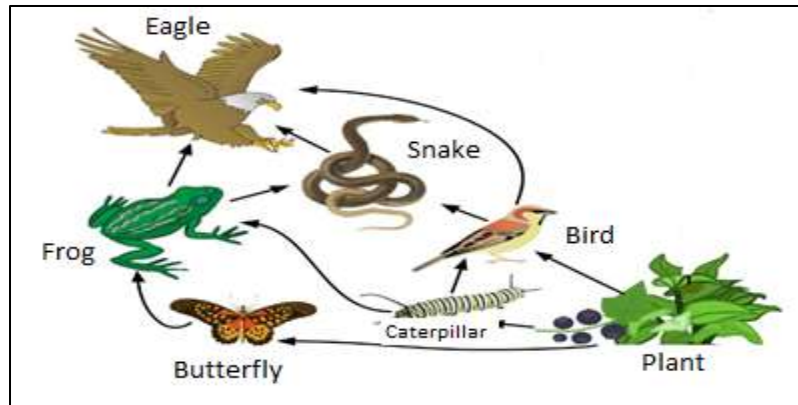
If the current across ammeter (A1) is 0.4 Amp and the voltage across (V1) is 2.5v. Calculate the current at (A2) and the voltage at (V2). Give explanations for your answers.

(4 marks)

Q.27. CONSIDERING FUTURE

Local Environmental concerns

Study the food web diagram below to answer questions (i and ii) that follow.



- i. From the above food web, make a food chain that consist of five organisms.

(2 marks)

- ii. Explain what will happen if there is a sudden decrease in the frog and bird population.

(2 marks)

- iii. Explain why organisms in the lower feeding (trophic) levels is higher in energy content than those in the upper feeding (trophic) levels? Give ONE (1) example of the organism that has more energy content in the above food web.

(3 marks)

Q.28. RESOURCES

Origin of elements

Use your knowledge on the properties of metals to answer questions (i and ii) that follow.

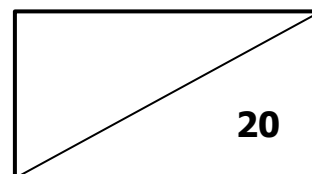
- i. Explain why metals are good conductors of electricity.

(2 marks)

- ii. Explain ONE (1) reason why Aluminum metal is used to make cooking pots.
(**Hint:** Use your understanding of properties of metals to answer this question).

(2 marks)

SECTION C:



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ANSWER SHEET MULTIPLE CHOICE

Write clearly the letter of the correct answer in the box provided. Make sure your answer is put alongside the right question number

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SECTION

MARKS

MARKER

SCRIPT
CHECKER

A

15

B

40

C

20

TOTAL

75

Markers/Checkers
initials