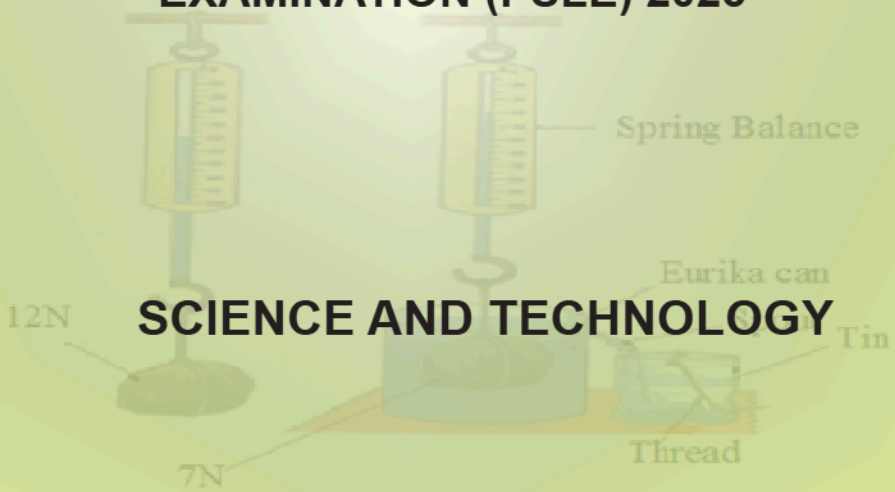
THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

THE NATIONAL EXAMINATIONS COUNCIL OF TANZANIA

CANDIDATES' ITEM RESPONSE ANALYSIS REPORT FOR THE PRIMARY SCHOOL LEAVING EXAMINATION (PSLE) 2025



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FOREWORD

This report on Candidates' Item Response Analysis (CIRA) for the Primary School Leaving Examination (PSLE) 2025 in the Science and Technology subject has been prepared to provide feedback to education stakeholders and the respective authorities on how the candidates responded to the examination questions. The examination assessed candidates' competency in the Science and Technology subject in the implementation of the subject syllabus for Standard III–VII.

The statistical analysis and candidates' responses show that the candidates who performed well had competency in various examined concepts, they understood the demands of each question and responded correctly. However, weak performance by some candidates was due to inadequate competencies in the examined concepts, including misconceptions about the demands of the questions, particularly those involving calculations and requiring clarification.

The National Examinations Council of Tanzania expects that the feedback provided in this report will enable education stakeholders to understand the challenges that candidates encounter in responding to examination questions and set appropriate strategies to improve the teaching and learning process for candidates.

The National Examinations Council of Tanzania expresses its sincere gratitude to all those who participated in the preparation of this report.

Prof. Said Ally Mohamed
EXECUTIVE SECRETARY

1.0 INTRODUCTION

This report of the Primary School Leaving Examination (PSLE) 2025 for the Science and Technology subject, analyses the competencies examined as stipulated in the 2016 Science and Technology syllabus for Standards III – VII. The examination adhered to the improved 2024 examination format.

The examination paper consisted of eight (8) questions, divided into Sections A, B and C. Section A consisted of three (3) questions that included multiple-choice items, matching items and short answer questions that required a candidate to select the correct words from the box. Section B consisted of three (3) short answer questions and Section C consisted of two (2) questions which assessed the concepts on interpreting a picture and calculation skills. In each section, candidates were asked to answer all questions. Sections A and B had twenty (20) marks each and Section C had ten (10) marks, thus making a total of 50 marks in this paper. Analysis of results shows that among the 1,146,202 candidates who attempted this examination, 967,724 (84.43%) passed with grades A – C and 178,478 (15.57%) failed. The candidates' performance in 2025 has increased by 0.68 per cent as compared to 2024.

This analysis report shows how candidates responded to questions and reasons for their responses. Additionally, the percentages of candidates who failed to answer the question and those who did not answer for various reasons have been provided.

In sections B and C, the analysis of candidates' responses focused on the quality of their responses and their performance in a particular question. Extracts of good and poor responses have been used to illustrate the reality of the candidates' responses. The candidates' performance statistics for each question are presented using tables or figures. The summary of performance in each competency is shown in the Appendix.

The candidates' performance on each question is divided into three categories: weak, average and good. These levels depend on the percentage score of the specific question. If the candidates performance ranges from 0–39, 40–59 and 60–100 percentage, the performance is categorised as weak, average and good, respectively.

This report comprises five main parts: introduction, analysis of candidates' responses to each question, analysis of candidates' performance in each competency, conclusion and recommendation.

2.0 ANALYSIS OF THE CANDIDATES' RESPONSES IN EACH QUESTION

This part analyses the candidate's responses to each question. Analysis of candidates' responses in each question from sections A, B and C have been done to identify candidates' competence in each respective question item.

2.1 Section A: Multiple Choice Items, Matching Items and Completion of Items

Section A consisted of three (3) questions. Question one had ten (10) multiple choices items that required a candidate to choose the correct answer, question two (2) had five (5) matching items and question three (3) had five (5) items of filling in the blanks by choosing the correct words from the box. The analysis of candidates' responses has been done as follows:

2.1.1 Question 1: Identifying the Various Systems of the Human body

The question assessed candidates' competence in identifying various systems of the human body. The question required the candidate to choose the correct answer from alternative (A - E) and write its letter in the space provided.

Candidates who attempeted this question were 1,146,202 of whom, 1,011,295 (88.23%) passed, and 134,907 (11.77%) failed. The general performance on this question was good. The performance in this question was very good compared to other questions in this examination. The candidate's performance in this question is shown in Figure 1.

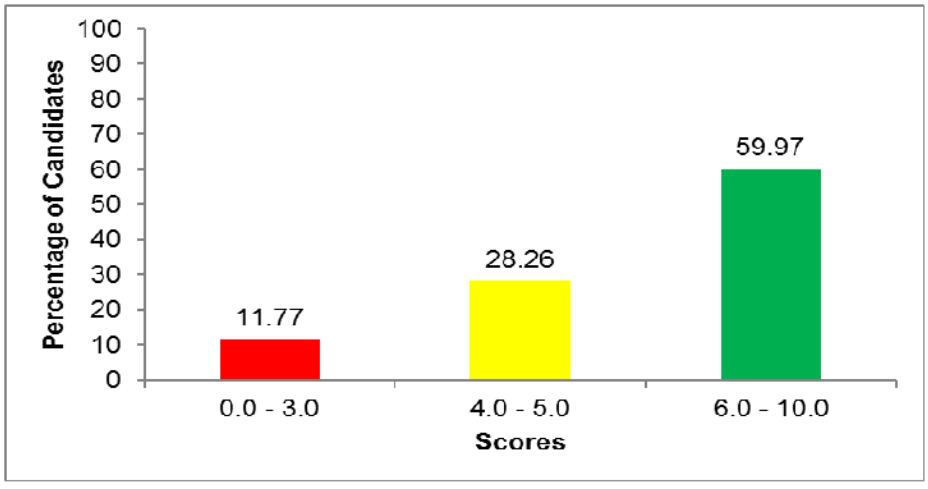


Figure 1: *The summary of candidates' performance in question 1*

Figure 1 shows that 88.23 per cent of the candidates passed, of which 59.97 per cent scored 6 to 10 marks and 28.26 per cent scored 4 to 5 marks. However, 11.77 per cent scored 0-3 marks and 7,328 (0.64%) candidates failed to answer any item, hence scored 0.

Analysis of candidates' responses for each item in question 1 is as follows:

(i) What will happen if the white blood cells fail to function?
- A The blood will fail to clot on fresh wounds
- B Carbon dioxide will not be transported inthe blood
- C The body will fail to fight against germs, causing diseases
- D The amount of blood in the body will decrease
- E Oxygen will not be transported in the blood

Analysis shows that the candidates who responded to this question by choosing the correct answer C, *the body will fail to fight against germs causing diseases,* had competency in

identifying the functions of white blood cells in the human body. They understood that white blood cells are among the cells found in blood, and that their function is to fight germs that cause various diseases.

Candidates who responded incorrectly to this question lacked adequate knowledge of the functions of the white blood cells. For example, those who chose alternative A, *the blood will fail to clot on fresh wounds,* did not know that blood clotting is the function performed by platelets and not white blood cells. Those who chose alternative B, *carbon dioxide will not be transported in the blood,* did not know that carbon dioxide is transported by red blood cells from various parts of the body to the lungs for exhalation. Those who chose D, *the amount of blood in the body will decrease*, failed to understand that the amount of blood in the body is due to the presence of red blood cells produced in the bone marrow. Therefore, the decreased of blood is due to a lack or an inadequate number of red blood cells. Furthermore, candidates who chose E, *oxygen will not be transported in the blood*; did not realise that oxygen is transported by red blood cells from the lungs to other parts of the body.

(ii) How many ovaries are in female reproductive system?
   A Two
   B Five
   C Three
   D Four
   E Six

This item assessed candidates' ability to identify the female reproductive system. The correct response was A, *two*. Those candidates who chose the correct answer were familiar with the female reproductive system and understood that it has two ovaries, one on the left side of the pelvic girdle and the other one on the right side of the pelvic girdle. Those who chose alternatives B, five, C, three, D, four and E, six, lacked knowledge of the female reproductive system, hence they did not know the available number of ovaries.

(iii) Which part in human digestive system stores food temporarily before further digestion?

A Stomach
B Large intestine
C Small intestine
D Esophagus
E Rectum

This item assessed candidates' ability to identify the part of the human digestive system that stores food temporarily before further digestion. Candidates who chose the correct answer A, *Stomach* had enough knowledge of the human digestive system and its functions. They understood that the stomach's function in the digestive system is to store food temporarily before further digestion in the ileum.

On the other hand, candidates who failed to opt for the correct answer, opted for alternative parts of the digestive system that were not correlated to the temporary storage of food. For instance, those who opted for B: *large intestine*, failed to understand that the large intestine absorbs water so that the digested food becomes faeces. Those who chose alternative C, the *small intestine*, failed to understand that the function of the small intestine is the absorption of nutrients. Candidates who opted for D, *oesophagus*, did not understand that the function of the oesophagus is to transport food from the mouth to the stomach and those who chose option E, *rectum,* failed to understand the function of the rectum, which is to store faeces temporarily before they are excreted from the body.

(iv) Which substance softens food during chewing?

A Teeth
B Tongue
C Lips
D Saliva
E Gum

The item assessed the candidates' ability to identify the substance responsible for softening food and their understanding of the concept of digestion in chewing. Some candidates respond correctly by opting for D, *Saliva*. These candidates had adequate knowledge and understood that the saliva softens food that has been digested in the mouth, making it easier to be swallowed.

Also, saliva contains hormones that help to soften food.

Some candidates chose incorrect responses, for example, those who chose distractor A, teeth, fail to understand that the function of teeth is to break down food substances in the mouth into small particles. Those who opted for B, *tongue*, failed to realise that the tongue's function is to mix and roll food substances for easy swallowing, and to taste different types of food. Those who opted for C, *lips,* did not understand that lips help hold food and keep it in the position for swallowing. However, those who chose E *gum* did not understand that gums form a protective seal, preventing bacteria from entering the teeth and causing infection.

(v) Which organ of the human excretory system is responsible for the excretion of by–products of chemicals and excess water?
   A Lungs
   B Kidney
   C Liver
   D Nose
   E Pancrease

This item assessed candidates' ability to recognise the organ responsible for excreting chemical by-products and excess water. The correct answer was B, *Kidney*. Candidates who responded correctly demonstrated the ability to recognise the body organs. They recognised that the kidney is an organ that removes by-products of excess medicines and water from the body in the form of urine.

However, some candidates opted for the other distractors *A, C, D* and *E*. For example, those who chose alternative A, *lungs*, failed to understand that the function of lungs is to facilitate gaseous exchange in the body by taking in oxygen from the air and transferring it to the bloodstream, while removing carbon dioxide, a waste product, from the blood. Those who chose C, *liver*, failed to understand that the function of the liver is detoxification and other metabolic activities. Those who chose D, *nose,* failed to understand that the nose assists in breathing by filtering air entering the lungs and also assists in smelling different substances. On the other hand, those candidates who chose alternative E, *pancreas*, failed to understand that the pancreas regulates the blood sugar in the body.

(vi) Which excretory products are being produced during playing football?
   A Sweat and tears
   B Tears and dirty water
   C Carbon dioxide and sweat
   D Dirty water and sweat
   E Sweat and dirty water

The question tested candidates' competency in recognising excretory products produced by the body when playing football. The correct answer was C, *Carbon dioxide and swea*t. Candidates who chose the correct answer were competent in identifying that when someone plays football, they excrete sweat and exhale carbon dioxide gas. However, some of the candidates who failed on this item chose distractors *A, B, D* and *E*. These candidates failed to understand that tears are not excretory products, and they are not produced when playing football. They also failed to understand that dirty water is not excretory products, but sweat, urine and carbon dioxide are excretory products.

(vii) Which method is used by miners to conserve the environment?
   A Removing stone pieces from the pits
   B Pouring chemicals into the pits
   C Planting trees into pits
   D Filling the pits after mining
   E Mining in a small area

This item assessed candidates' ability to identify the appropriate methods for environmental conservation in mining areas. The correct answer in this item was D, *Filling the pits after mining.* The candidates who responded correctly were competent in identifying methods of environmental conservation in mining areas. They understood that filling the pits after mining allows new vegetation to grow and conserves the soil. However, other candidates made wrong choices. For instance, those who chose A, removing stone pieces from the pits, did not understand that removing stones would increase soil erosion, which in turn would destroy the environment.

Candidates who selected option B, *pouring chemicals into the pits*, did not understand that pouring chemicals into the pits would kill flora and fauna, thereby disturbing the ecosystem. Candidates

who chose C, *planting trees in pits,* did not understand that planting trees in pits would cause them to fail to grow due to a lack of nutrients and light. Likewise, candidates who opted for E, mining in a small area, did not understand that such action would also destroy the environment, since it involves deforestation, soil pollution and the application of various chemicals.

(viii) An old man had a bad smell in his mouth every time he was speaking. What was the cause of the problem?
A The type of food he was eating
B Cleaning the mouth without using a toothbrush
C Feeding on one type of food
D Using a finger when cleaning the mouth
E Using a toothbrush which is not his

This question assessed candidates' ability to identify concepts related to mouth hygiene. The correct response was B, *cleaning the mouth without using a toothbrush*. Candidates who responded correctly were competent at identifying the correct means of mouthwash. They understood that, for a mouth to smell fresh, we must brush our teeth with a toothbrush.

On the other hand, some candidates selected incorrect responses. For example, those who chose A, *the type of food he was eating*, failed to understand that feeding on a variety of food cannot contribute to mouth smell, but rather bacterial activities on food remains in the mouth. Those who opted for C*, feeding on one type of food*, failed to understand that the bad smell is not related to the kind of food a person eats. Others chose D, *using a finger when cleaning the mouth.* These candidates did not understand that proper mouth hygiene cannot be done with a finger; rather, it can be done with a clean toothbrush and toothpaste. Likewise, those who opted *E, using a tooth brush that is not theirs.* They failed to understand that using one's toothbrush can contribute to the spread of diseases related to oral health and other diseases.

(ix) Why we are advised to wash our faces and remove the eye discharge soon after waking up in the morning?

A To protect against houseflies, which spread eye disease

B To protect from ticks spreading eye diseases

C To make sure we are safe from mosquitoes spreading malaria

D Protect against attacks of eyes lice

E To be free from non- communicable diseases

The correct response was A, *to protect against houseflies, which spread eye diseases*. Candidates who chose the correct answer understood that eye discharge might attract houseflies and cause them to be affected with various diseases spread by houseflies. Also, they understood that daily eye washing reduces the risk of infection.

However, some candidates failed this question by choosing the wrong responses. For instance, some chose distractor B *to protect from ticks spreading eye diseases*. These candidates failed to understand that ticks affect mainly domestic and wild animals. Whereas other candidates opted for C, *to make sure we are safe from mosquitoes that spread malaria.* These candidates did not understand that mosquitoes spread malaria and not eye diseases.

Candidates who opted for D *to protect against attacks of eye lice* failed to understand that lice cannot cause eye disease. And those who chose distractor, E, to *be free from non-communicable diseases* failed to differentiate between communicable and non-communicable diseases. Non-communicable diseases can not spread from one person to another.

(x) We are advised to take shower at least twice a day. What is a recommended time to do so?

A In the morning and afternoon

B In the evening and night

C At night and afternoon

D At night and morning

E In the morning and evening

This item assessed candidates' ability to identify a recommended time for showering. The correct answer was E *in the morning and*

evening. Candidates who responded correctly understood that the right time to take a shower is in the morning after waking up and in the evening before going to sleep. However, some candidates responded incorrectly, choosing options A, *in the morning, and afternoon* B, *in the evening and night* C, *at night and in the afternoon* and D, *at night and morning*. These candidates did not know when to shower. For instance, in the afternoon, various activities are being held, so it is not common for most people. Therefore, showering should be done in the morning when people wake up and in the evening after completing various activities.

2.1.2 Question 2: Investigating Things in the Environment

The question assessed the candidates' competency to investigate various aspects of the environment, specifically the identification of parts of the flower and its functions. Candidates who performed well in this question were able to match the functions of various flower parts with the name of the part performing the function.

The question consisted of five items that required the candidate to match the various functions of the flower parts in list A with the names of the parts performing those functions in list B. The question was as follows:

Match the function of the flower part in **List A** with the name of the flower part performing the function in **List B,** and write the letter of the correct answer in the space provided.

List A	Answers	List B
(i) Develops into fruits with seeds after fertilization.	( )	A Petal B Receptacle C Ovary and ovule D Style E Anther and filament F Stamen G Stigma
(ii) They form stamen.	( )	
(iii) Attracts animals for pollination.	( )	
(iv) Receives pollen for pollination.	( )	
(v) Transmits pollen from the stigma to the ovary.	( )	

A total of 1,146,202 candidates attempted the question. Of them, 718,490 (62.68%) candidates responded correctly, and 427,712 (37.32%) responded incorrectly. The general performance of this question was good. Figure 2 summarises the candidates' performance in this question.

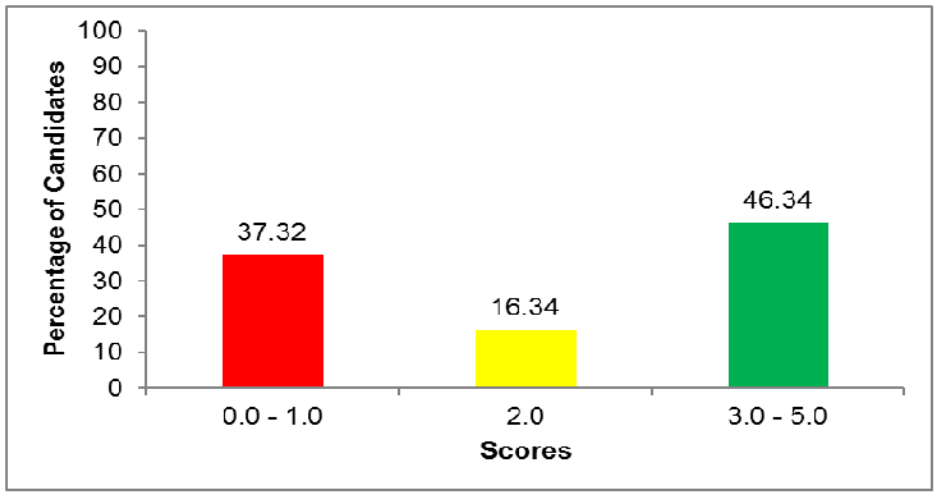


Figure 2: *Candidates' performance in question 2*

The analysis in Figure 2 shows that 62.68 per cent of the candidates scored 2-5 marks, of which 16.34 per cent scored 2 marks, and 46.34 per cent scored 3 to 5 marks. However, 37.32 per cent of the candidates scored 0 to 1 mark; of which 17.11 scored 1 mark while 20.21 scored 0.

Statistical analysis of candidates' responses, showed that those who answered this question correctly were competent at identifying various parts of a flower and its functions. For instance, in item (i), candidates were required to identify the flower part that develops into fruits with seeds after fertilization. The correct answer was C, *Ovary and ovule.* Candidates who responded correctly were competent and knew that an ovary is the part of a flower that contains ovules that grow into fruits with seeds after fertilization.

However, most of the candidates chose the distractors: *A petal;* B, *receptacle;* and E, *anther and filament.* Candidates who select A, petal did not understand that a petal attracts insects and birds for pollination. Either those who chose B, the receptacle, also did not realise that the receptacle helps attach a flower to the plant or branch. Likewise, candidates who opted for E, *anther and*

filament did not know that those parts form a stamen.

In item (ii) candidates were asked to identify the parts of a flower that form a stamen. The correct answer was E, *Anther and filament*. The candidates who answered this part correctly understood that the stamen has two parts, the anther and the filament, thus, the filament is a thin, long stalk with anthers at its top, while the anther carries pollen, which consists of pollen grains. Some of the candidates responded incorrectly to this item by choosing distractors C, *ovary* and *ovule,* and G, *stigma*. These candidates failed to understand that the ovary and the ovule develop into fruits with seeds after fertilization and that the stigma receives pollen for pollination.

Item (iii) required the candidates to match the flower part that attracts animals for pollination. The correct answer was A, *Petal.* Candidates who responded correctly understand that a petal is a flower leaf with bright colors that attracts insects and birds for pollination. However, a few candidates failed to answer correctly as they chose distractors D, *style,* and F, *stamen*. These candidates did not understand that style transmits pollen from the stigma to the ovary and the stamen produces pollen grains for pollination.

Item (iv) required the candidates to identify the flower part that receives the pollen for pollination. The correct answer was G, *Stigma.* Candidates who chose the correct answer recognized that stigma is the top part of the pistil that contains sticky granules that trap pollen. However, those candidates who failed this item chose distractors F, *stamen,* and B, *receptacle.* They were unable to realize that stamens produce pollen grains for pollination and the receptacle holds the flower in place.

In this item (v), the candidates were required to identify the flower part that transmits pollen from the stigma to the ovary. The Correct answer was D, *Style*. Candidates who responded correctly to this item knew that the style is the thin tube that joins the stigma and the ovary and transmits pollen from the stigma to the ovary. However, some candidates failed to respond correctly to this item, by writing incorrect responses such as G, *stigma,* and E*, anther and filament*. Those candidates who chose G, stigma did not understand that stigma receives pollen grains from the anther. Likewise, those who chose *anther and filament* did not realize that these two parts of a flower form a stamen.

2.1.3 Question 3: Following Health Principles for Good Health

The question assessed candidates' competence in identifying various symptoms of communicable and non-communicable diseases. The question had five items, namely (i), (ii), (iii), (iv), and (v). The question asked:

Choose the correct disease from the box and write it in the space provided.

Tetanus	Tuberculosis	Schistosomiasis/Bilharzia
Diabetes	Asthma	Malaria

(i) Difficulty in breathing, chest tightness and whistling sound during breathing.
_____

(ii) Experiencing frequent urination, thirsty and tiredness.
_____

(iii) Tightening of the jaw muscles, high fever and backbone pain
_____

(iv) Persistent cough, sweating during the night and coughing up blood._____

(v) Urinating blood and abdominal pain. _____

This question was attempted by 1,146,202 candidates, of whom 937,899 (81.83%) responded correctly, and 208,303 (18.17%) responded incorreclty. The overall performance on the question was good, as 937,899 candidates scored 2 to 5 marks. Figure 3 shows the summary of the candidates' performance in question 3.

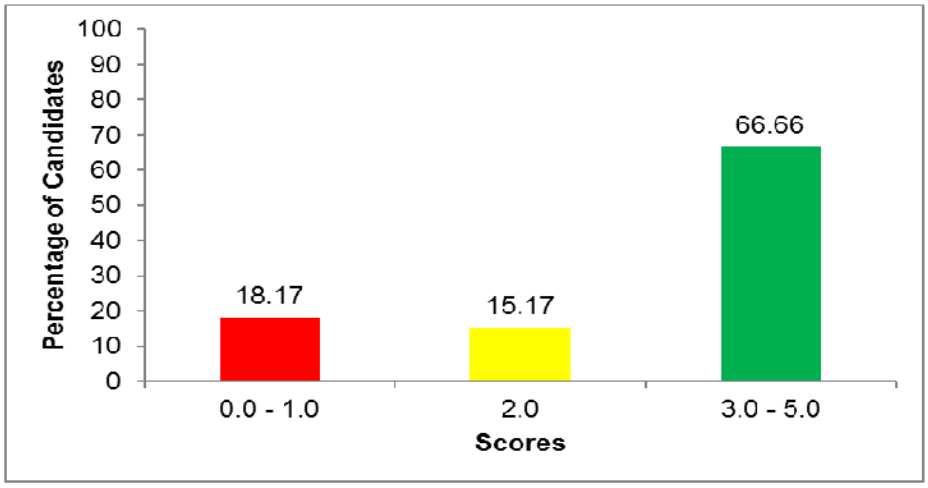


Figure 3: Candidates' performance in question 3

Figure 3 shows that 81.83 per cent scored 2 to 5 marks. However, 18.17 per cent attempeted only one item and scored 1 mark or were unable to attempt any items and hence scored 0. Further analysis shows that the candidates with high performance (81.83%) had adequate knowledge of identifying the symptoms of communicable and non-communicable diseases. The analysis of each item in this question is as follows:

In item (i) the candidates were required to identify the disease with symptoms which include difficulty breathing, chest tightness, and a whistling sound during breathing. The correct answer was *asthma.* Candidates who chose the correct answer were competent and understood that asthma is a disease that affects the respiratory airways and causes the mentioned symptoms. Extract 1.1 is a sample of a correct response from one of the candidates in question 3.

(i) Difficulty in breathing, chest tightness and whistling sound during breathing.
ASTHMA

(ii) Experiencing frequent urination, thirsty and tiredness.
DIABETES.

(iii) Tightening of the jaw muscles, high fever and backbone pain.
TETANUS.

(iv) Persistent cough, sweating during the night and coughing up blood.
TUBERCULOSIS

(v) Urinating blood and abdominal pain. SCHISTOSOMIASIS / BILHARZIA

***Extract 1.1**: A sample of correct responses to question 3*

In extract 1.1, the candidate correctly identified all diseases and their symptoms, showing that they understood the concepts asked.

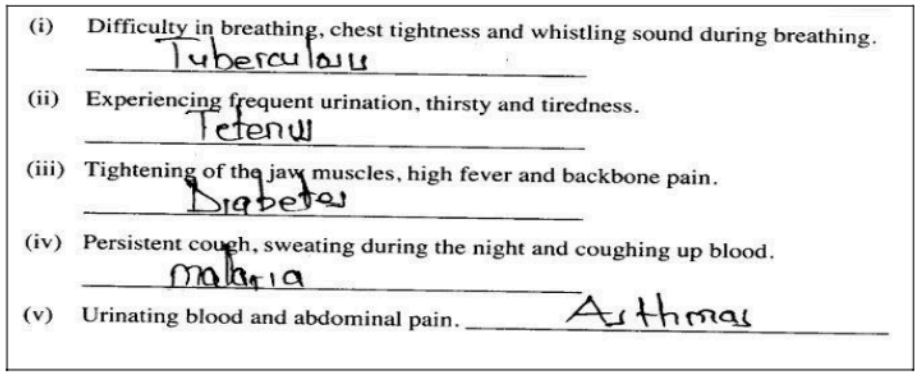
However, most of the candidates who failed this item wrote tuberculosis. These candidates were unable to realize that the symptoms of tuberculosis include persistent cough, sweating during the night, and coughing up blood.

In part (ii), candidates were required to identify the disease with the symptoms which include experiencing frequent urination, thirst, and tiredness. The correct answer was *Diabetes.* The candidates who selected the correct answer had adequate knowledge concerning diabetes. They knew that diabetes is caused by the pancreas failing to produce enough insulin, which in turn affects blood sugar levels, leading to such symptoms. On the other hand, most of the candidates who failed this item wrote *malaria.* These candidates were unable to realize that symptoms of malaria include, fever, headache, nausea, and vomiting.

In part (iii), candidates were required to identify the disease with symptoms which include tightening of the jaw muscles, high fever, and backbone pain. The correct answer was *Tetanus.* The candidates, who chose the correct answer were competent and recognized that tightening of the jaw muscle, high fever and backbone pain are the symptoms of tetanus. However, some candidates failed to provide the correct answer by writing diseases such as malaria and tuberculosis.

Item (iv) required the candidates to identify the disease with symptoms which include persistent cough, night sweating and coughing up blood. The correct answer was *Tuberculosis.* Those candidates who answered this item correctly had adequate knowledge of the disease. They understood that tuberculosis is an airborne infectious disease that usually affects the lungs, and its symptoms include a persistent cough, night sweats and coughing up blood. On the other hand, some candidates who failed to choose the correct answer chose diseases such as malaria, diabetes and tetanus. This implies that the candidates lacked knowledge of such diseases.

For item (v), candidates were required to identify the disease whose symptoms are urinating blood and abdominal pain. Candidates who chose the correct answer, *Schistosomiasis*/*Bilharzia* were competent in identifying the symptoms of various disease. Those candidates understood that schistosomiasis/bilharzia is a disease caused by parasitic worms and that the worms affect the intestines and urinary bladder. However, most of the candidates who responded incorrectly named malaria. Such candidates did not know the symptoms of malaria which include nausea, headache and vomiting. Extract 1.2 is a sample of an incorrect response from the candidate in this question.


(i) Difficulty in breathing, chest tightness and whistling sound during breathing.
Tuberculosis

(ii) Experiencing frequent urination, thirsty and tiredness.
Tetenus

(iii) Tightening of the jaw muscles, high fever and backbone pain.
Diabetes

(iv) Persistent cough, sweating during the night and coughing up blood.
Malaria

(v) Urinating blood and abdominal pain. Asthmas

Extract 1.2: *A sample of incorrect responses to question 3*

Extract 1.2 shows a candidate who answered all items in this question incorrectly.

2.2 Section B: Short Answer Questions

This section consisted of three questions, 4, 5 and 6 and had a total of 20 marks.

2.2.1 Question 4: Using Information and Communication Technology (ICT)

The question assessed candidates' competence in the concepts of antenna.This question had two items namely (a) and (b).The question asked:

(a) Mention any two types of antenna?

(i) _____

(ii) _____

(b) Alibaba has two parabolic antennas, one has a diameter of 48 cm and the other 56 cm. Which antenna among the two works better?

_____

A total of 1,146,202 candidates attempted this question, of whom 923,420 (80.56%) candidates passed, and 222,782 (19.44%) failed. The performance in this question was good. Figure 4 shows the summary of the candidate's performance in this question.

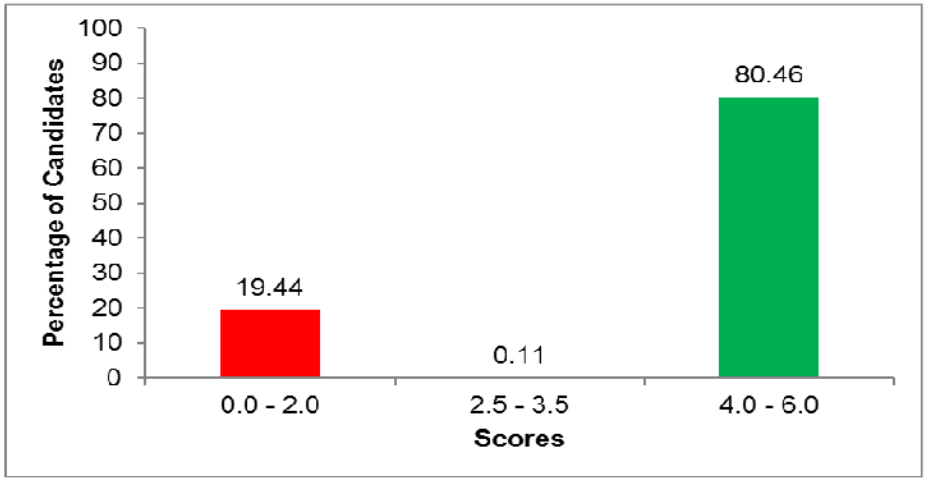
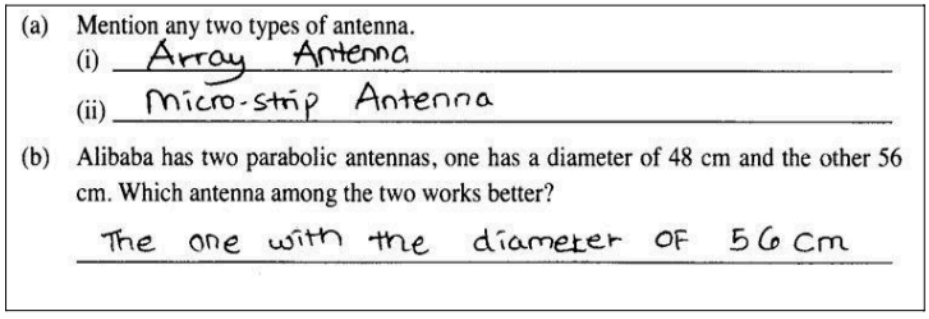


Figure 4: *Candidate's performance on question 4.*

Figure 4 shows that 80.46 per cent of the candidates scored 4-6 marks and 0.11 per cent scored 2.5-3.5 marks.

Statistics show that 80.56 per cent of the candidates were competent and could respond to this question correctly. For example, in item (a) (i), (ii) and (b), candidates were able to associate the concepts of antenna with Information and Communication Technology concepts. They recognized the types of antennas and how they operate. For instance, in item (b), they knew that antennas with a large diameter perform better than those with a smaller diameter for transmitting and receiving signals. Extract 2.1 shows a sample of a candidate's correct response in question 4.

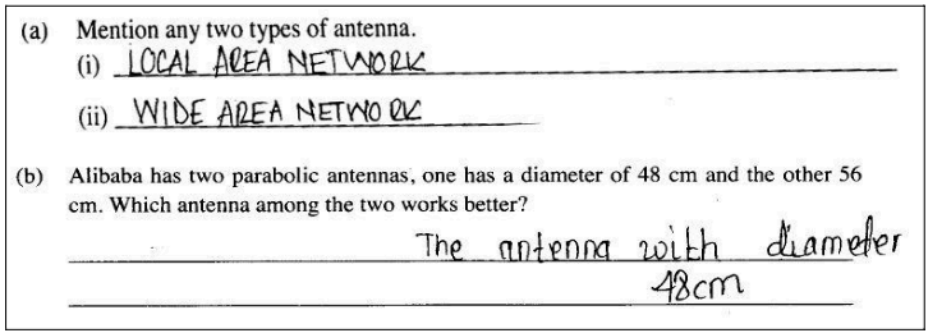

(a) Mention any two types of antenna.
(i) Array Antenna
(ii) Micro-strip Antenna
(b) Alibaba has two parabolic antennas, one has a diameter of 48 cm and the other 56 cm. Which antenna among the two works better?
The one with the diameter of 56 cm

Extract 2.1: *A sample of candidates' correct responses to question 4.*

Extract 2.1 shows a candidate who answered all items correctly. Such a candidate knew the concepts of the antennas asked about.

On the other hand, the candidates who performed poorly lacked adequate knowledge on the concept of antenna. For example, in item (a) (i) and (ii), they named a type of antenna that was not correct with respect to the context, such as *Local Area Network* and *Wide Area Network*. Similarly, in item (b), some candidates wrote incorrect responses, such as the antenna with 48 cm. These candidates did not know that the diameter of an antenna increases its efficiency. Thus, an antenna with 56 cm diameter works better than one with 48 cm. Likewise, other candidates responded with answers that were not presented as alternatives, such as 30 cm

in diameter and a complex machine. Extract 2.2 shows a sample of incorrect answers to question 4 from one of the candidates.


(a) Mention any two types of antenna.
(i) LOCAL AREA NETWORK
(ii) WIDE AREA NETWORK
(b) Alibaba has two parabolic antennas, one has a diameter of 48 cm and the other 56 cm. Which antenna among the two works better?
The antenna with diameter 48cm

Extract 2.2: *A sample of candidate's incorrect responses to question 4*

Extract 2.2 shows candidate's response who answered all items incorrectly. This candidate had inadequate knowledge on the concepts of antenna.

2.2.2 Question 5: Mastering of Scientific Skills

The question assessed the candidate's ability to master various theories of scientific skills related to machines.This question had two items, namely (a) and (b). The question asked:

(a) A teacher's car broke down about 800 metres away from school, therefore he asked for the help from pedestrians to push the car to school.

(i) What type of machine does the teacher's car belong?

_____

(ii) Calculate the total force that was applied by pedestrians by pushing a car for a distance of 900 meters if their total work done was 18000 joules.

_____

(b) What device would you use to simplify the sewing of clothes task instead of using hand sewing needle?

_____

This question was attempted by 1,146,202 candidates, of which 881,843 (76.94%) passed and 264,359 (23.06%) failed. The performance in this question was good. Figure 5 summarises the candidates' performance in this question.

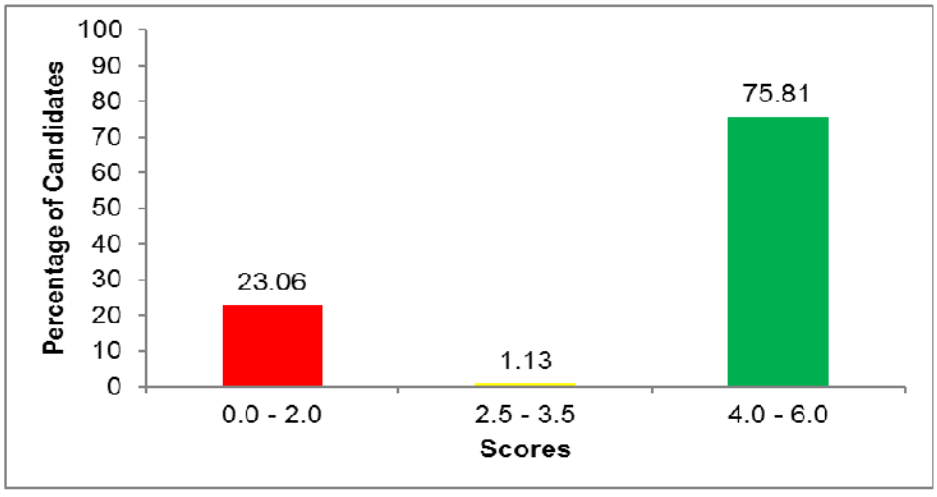


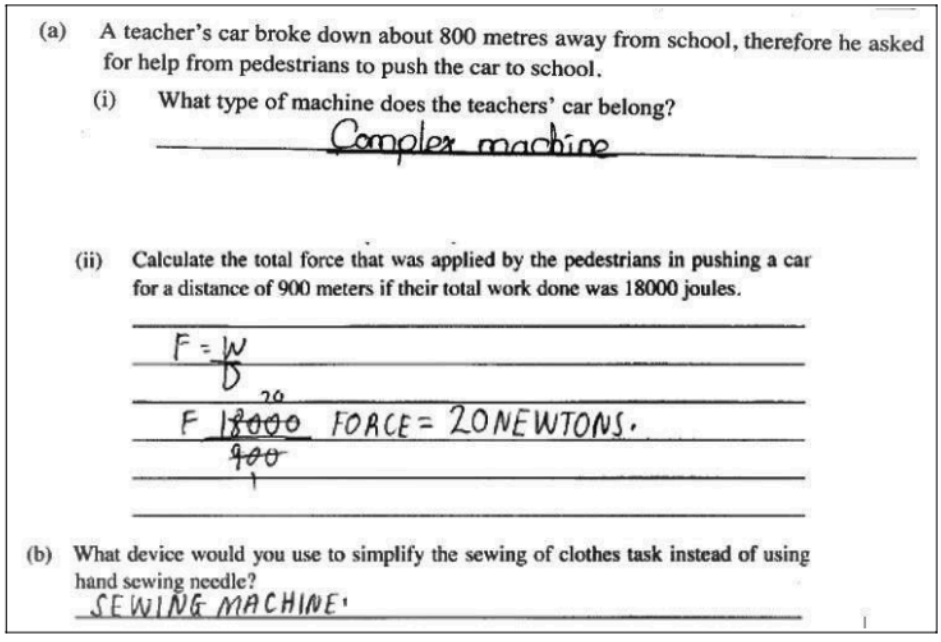
Figure 5: *Candidates' performance in question 5*

Figure 5 shows that 76.94 per cent of the candidates passed this question and scored 2.5 to 6 marks. Those candidates knew scientific concepts associated with machines. For instance, in item (a) (i), the candidates responded correctly that the teacher's car was a *complex machine*. The candidates understood that complex machines are made from two or more simple machines. Hence, the teacher's car consists of more than one simple machine.

In part (ii), candidates were required to calculate the total force of pedestrians in pushing a car. The candidates who managed to calculate the force and obtained the correct answer 20N, had competency in using a formula, force = $\frac{work\ done}{distance}$.

In part (b), candidates were required to mention the device that can be used to simplify the sewing of clothes instead of using a hand sewing needle. The correct answer was *Sewing machine*.

The candidates who responded correctly knew that a sewing machine is one of the complex machines that sews clothes in a simpler way than a sewing needle. Extract 3.1 shows a sample of the candidate who correctly answered question 5.


(a) A teacher's car broke down about 800 metres away from school, therefore he asked for help from pedestrians to push the car to school.

(i) What type of machine does the teachers' car belong?

Complex machine

(ii) Calculate the total force that was applied by the pedestrians in pushing a car for a distance of 900 meters if their total work done was 18000 joules.

$F = \frac{W}{D}$

$F \frac{18000}{900}$ FORCE = 20NEWTONS.

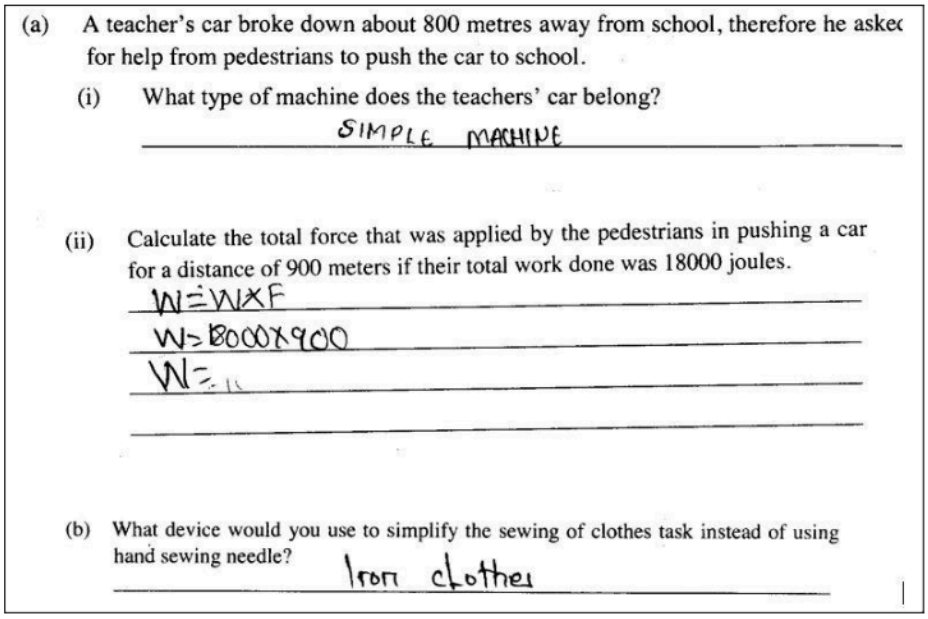
(b) What device would you use to simplify the sewing of clothes task instead of using hand sewing needle?

SEWING MACHINE.

Extract 3.1: *A sample of candidates' correct responses to question 5*

Extract 3.1 shows the responses of a candidate who answered all items correctly. This candidate understood the task of the question and had adequate knowledge of the various machine concepts asked.

On the other hand, 23.06 per cent of the candidates who failed this question lacked knowledge of machine concepts. For instance, in part (i), the candidates failed to explain the type of machine the teacher's car belongs to. They wrote that it was a simple machine rather than a complex machine. Also, in item (ii), they failed to use the formula to calculate force, hence they were unable to obtain the correct answer. In part (b), candidates gave wrong responses like iron clothes, thread and a pair of scissors. These candidates revealed that they lacked knowledge of the concepts of the machines they were asked about. Extract 3.2 shows a sample of an incorrect response from one of the candidates in question 5.


(a) A teacher's car broke down about 800 metres away from school, therefore he asked for help from pedestrians to push the car to school.

(i) What type of machine does the teachers' car belong?

SIMPLE MACHINE

(ii) Calculate the total force that was applied by the pedestrians in pushing a car for a distance of 900 meters if their total work done was 18000 joules.

W=WXF

W=8000X900

W=...

(b) What device would you use to simplify the sewing of clothes task instead of using hand sewing needle?

Iron clothes

Extract 3.2: *A sample of candidates' incorrect responses to question 5*

Extract 3.2 shows the responses of a candidate who wrongly answered all items. This candidate had inadequate knowledge of the various machine concepts asked about.

2.2.3 Question 6: Identifying Various Types of Energy and their Uses

The question assessed candidates' competence in identifying various theories of electricity.This question had four items (a) - (d). The question asked:

(a) Which law is verified by using a simple circuit?

_____

(b) Calculate the resistance in a wire with potential difference of 12 volts and the current of 0.4 amperes.

_____

(c) If a bulb is burnt in a house, and the rest fail to light up, what type of circuit would be installed in that house?

_____

(d) Which type of electrical circuit is suitable to be installed in the factory?

_____

This question was attempted by 1,146,202 candidates, of whom 598,870 (52.25%) passed, and 547,332 (47.75%) failed. Generally, the performance in this question was average. Figure 6 shows the summary of the candidate's performance in question 6.

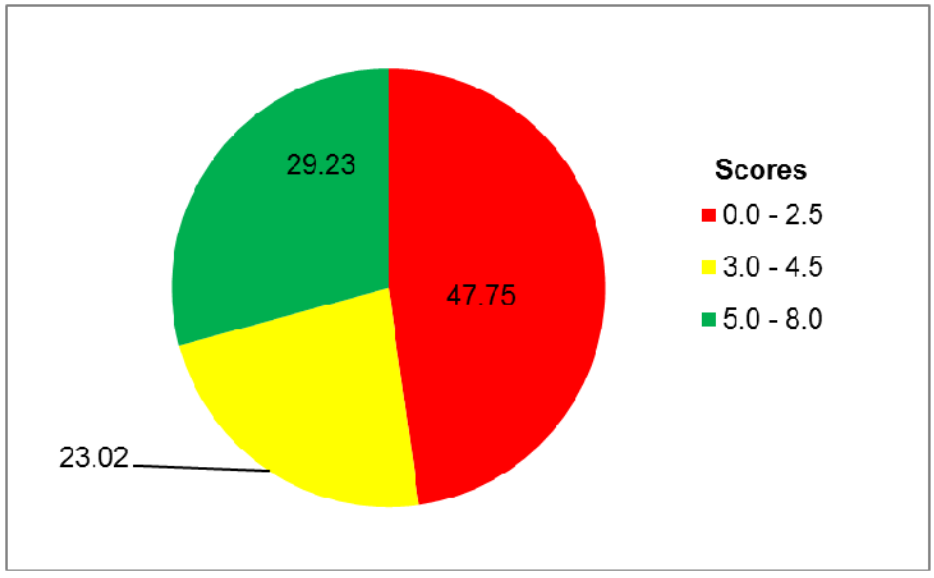
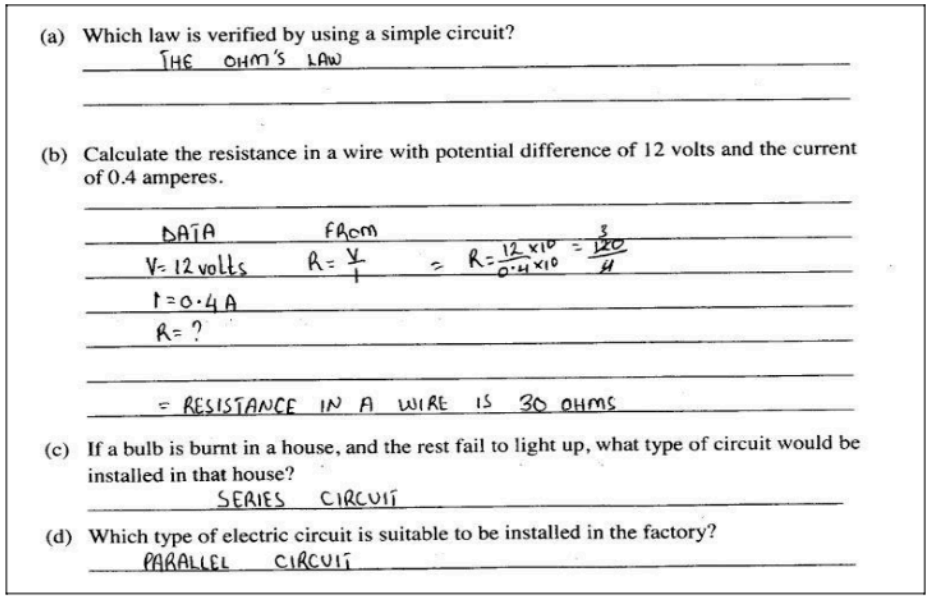


Figure 6: *Candidates' performance in question 6*

Figure 6 shows that 52.25 per cent of the candidates scored 3 to 8 marks. However, 47.75 per cent scored 0 to 2.5 marks, of which 27.60 per cent got 0.

Candidates who performed well were competent in responding to various questions about electricity concepts. For example, they were able to identify Ohm's law, calculating the resistance and mentioning the type of circuit used in homes and in industries, depending on its uses in parts (a) - (d), respectively. Moreover, the candidates understood the relationship between R, I and V, thus V = IR. For example, in calculating the resistance, R = $\frac{V}{I}$. The candidates were able to attain the correct answer, which was 30 ohms. When asked about the types of circuits, the candidates

named the correct ones: a series circuit and a parallel circuit in items C and D, respectively. Extract 4.1 shows a sample of a correct response to question 6.


(a) Which law is verified by using a simple circuit?
THE OHM'S LAW

(b) Calculate the resistance in a wire with potential difference of 12 volts and the current of 0.4 amperes.

DATA
V= 12 volts
I = 0.4 A
R = ?

FROM
$R = \frac{V}{I}$ = $R = \frac{12 \times 10}{0.4 \times 10} = \frac{120}{40}$ = 3

= RESISTANCE IN A WIRE IS 30 OHMS

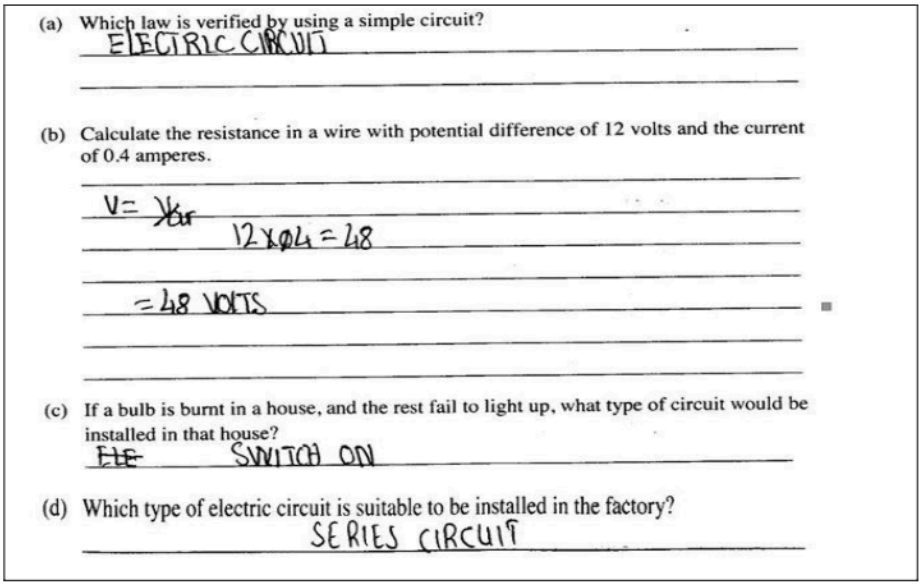
(c) If a bulb is burnt in a house, and the rest fail to light up, what type of circuit would be installed in that house?
SERIES CIRCUIT

(d) Which type of electric circuit is suitable to be installed in the factory?
PARALLEL CIRCUIT

Extract 4.1: *A sample of candidates' correct responses to question 6*

Extract 4.1 shows a candidate's response who correctly answered all items of question 6.

Given the average performance on this question, 47.75% of the candidates failed to provide the correct answer. They were unable to name Ohm's law, calculate resistance and differentiate between series and parallel circuits depending on their use. These candidates were incompetent in applying the law and calculating electrical resistance. Likewise, the candidates did not know the concepts of series and parallel circuits. They did not understand that in a series circuit, the resistors are connected in series. In this circuit, when one bulb is burnt, the other will not light up. Likewise, a parallel circuit is one in which its resistors are connected in parallel; thus, when one bulb is burnt, the other will work. Extract 4.2 shows a sample of an incorrect response to question 6.


(a) Which law is verified by using a simple circuit?
ELECTRIC CIRCUIT

(b) Calculate the resistance in a wire with potential difference of 12 volts and the current of 0.4 amperes.
V= ~~V&I~~
12 x 0.4 = 48
= 48 VOLTS

(c) If a bulb is burnt in a house, and the rest fail to light up, what type of circuit would be installed in that house?
~~ELE~~ SWITCH ON

(d) Which type of electric circuit is suitable to be installed in the factory?
SERIES CIRCUIT

Extract 4.2: *A sample of incorrect responses to question 6*

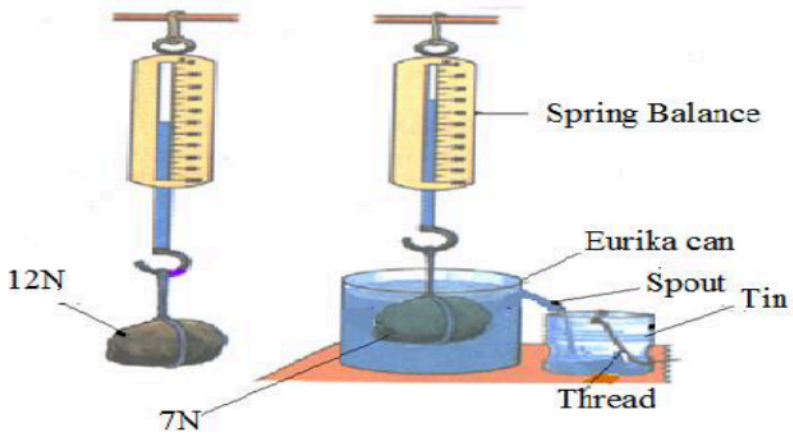
Extract 4.2 the candidate failed to attempt any item. For instance, instead of calculating resistance in item (b) as required, the candidate calculated voltage.

2.3 Section C: Interpreting Pictures and Calculation Questions

2.3.1 Question 7: Identifying Theories of Science and Technology

The question assessed candidates' ability to identify and apply Archimedes principle and the law of flotation. Archimedes' principle states that "*When an object is partially or totally immersed in a fluid, it experiences an upthrust which is equal to the weight of the fluid displaced by the object*". On the other hand, the law of floatation states that "*the magnitude of the upthrust force depends on the volume of the submerged part of the floating object*".

(a) Observe Figure 1 which shows the weight of stone in air and when immersed in water, then answer the questions that follow.



(i) What substance made the weight of the stone to be smaller when immersed in water than when in air?

_____

(ii) Calculate the upthrust of water when the stone is immersed in water.

_____

(b) Why ships do not sink in ocean? Briefly Explain.

_____

This question was attempted by 1,146,202 candidates, of whom 775,009 (67.62%) failed and 371,193 (32.38%) passed. The performance in this question was poor since (67.62%) candidates scored 0 to 2 marks. Moreover, this question performed poorly as compared to other questions in this examination. Figure 7 shows the summary of the candidates' performance on question 7.

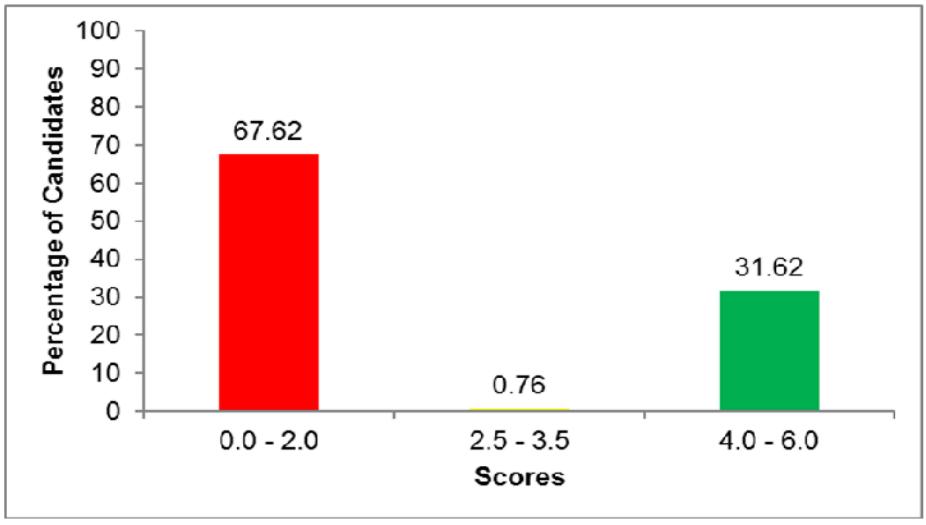


Figure 7: *Candidates' performance in question 7*

Figure 7 shows that 67.62 per cent of the candidates scored 0 to 2 marks; 0.76 per cent scored 2.5 to 3.5 marks; and 31.62 per cent achieved 4 to 6 marks.

The analysis of candidates' responses reveals that candidates with poor performance (67.62%) were incompetent in interpreting the figure and identifying Archimedes principle, which is the basis of the question asked. For instance, in responding to part (i), they got wrong by writing *gravitational force, reflection, spring balance and thread*. They could not realize that the upthrust causes the difference in weight of substance in air and in water.

In item (ii), they failed to calculate and obtain answers like 84N and 19N, which resulted from multiplication or addition instead of subtracting the weight of the substance in air from that of water. Similarly, in part (b), some candidates responded by providing reasons such as the *ship's engine, which prevents it from sinking,* and the *ship's gravitational force.* This implies that such candidates lacked knowledge of Archimedes' principle and the law of floatation. Extract 5.1 is a sample of an incorrect response from one candidate.

(i) What substance made the weight of the stone to be smaller when immersed in water than when in air?

Thread

(ii) Calculate the upthrust of water when the stone is immersed in water.

12N
× 7
84 = 84N

(b) Why ships do not sink in ocean? Briefly Explain.

Because ship have made up of gravitational force which are heavy to the Water

Extract 5.1: *A sample of an incorrect response to question 7*

Extract 5.1 shows a candidate who provided wrong responses to all items in this question.

On the other hand, those candidates with good performance were competent at interpreting the figure and identifying Archimedes' principle, which underlies the question asked. For example, in responding to item (i), the candidates wrote the correct answer *upthrust.* These candidates understood that upthrust is the force that enables objects to float in liquids/water. In item (ii), candidates who were able to calculate the value of upthrust and obtain the correct answer 5N, understood the formula for calculating upthrust by taking the difference between the weights of the stone in the air and the weight of the stone in water (12N -7N).

Additionally, in part (b), candidates correctly explained why ships do not sink in the ocean. They responded that a ship does not sink in the ocean because it has a lower density than that of water. Extract 5.2 is a sample of a correct response from one of the candidate to question 7.

(i) What substance made the weight of the stone to be smaller when immersed in water than when in air?

UPTHRUST

(ii) Calculate the upthrust of water when the stone is immersed in water.

$A_w = W_a - W_w$

$12N - 7N$

$A_w = 5N$

UPTHRUST = 5N.

(b) Why ships do not sink in ocean? Briefly Explain.

BECAUSE SHIPS ARE LESS DENSE THAN WATER

Extract 5.2: *A sample of correct responses to question 7*

Extract 5.2 shows a candidate's response who answered all items in this question correctly.

2.3.2 Question 8: Performing Scientific Experiments Correctly

This question assessed the candidates' competence in identifying flower parts and their functions.

Study Figure 2, then answer the question that follows.

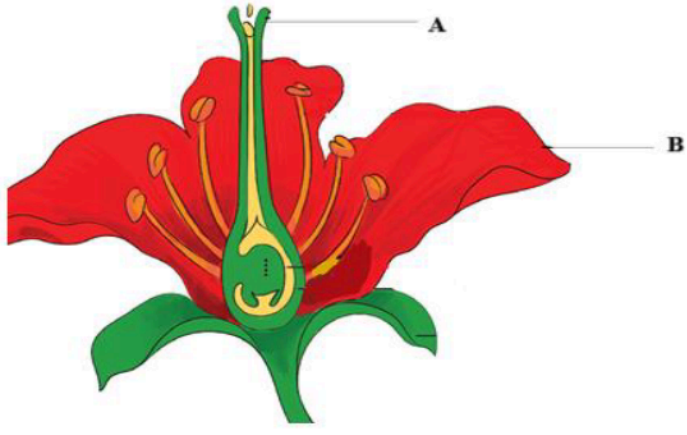


Figure 2

(i) Name the part shown by letter **A**.

_____

(ii) What is the function of the part labelled **B**?

_____

A total of 1,146,202 attempted this question, among them 783,886 (68.39%) passed and 362,316 (31.61%) failed. Statistics show that the general performance in this question was good. Figure 8 shows the summary of candidates' performance in this question.

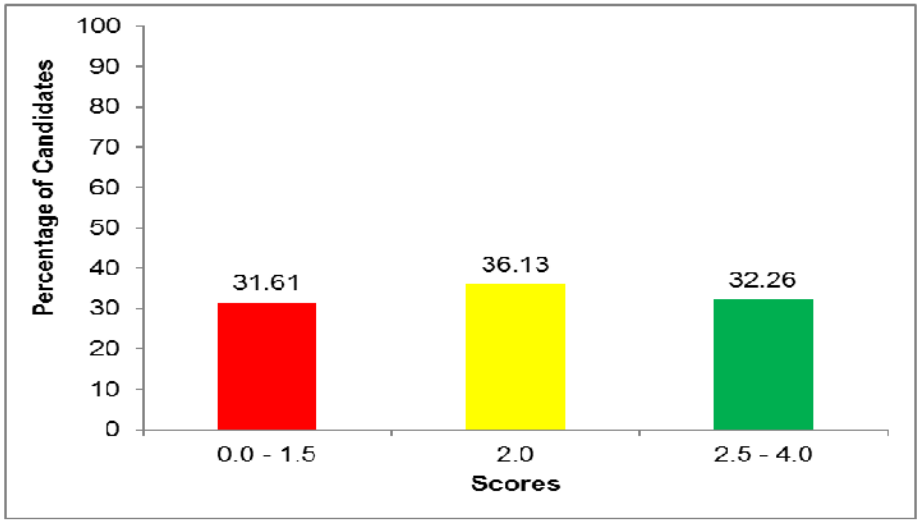
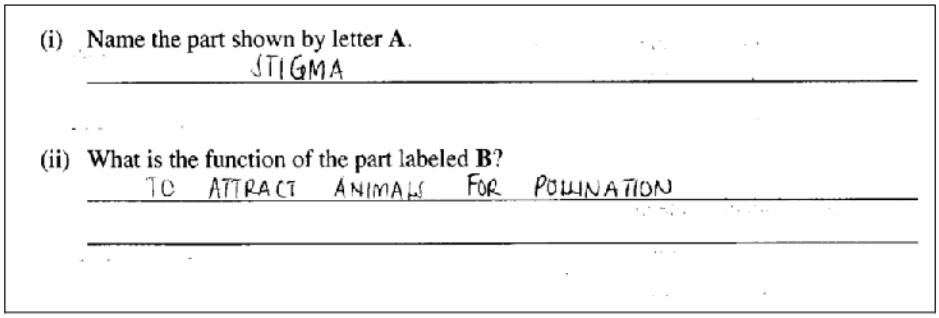


Figure 8: *Candidates' performance in question 8*

Figure 8 shows that 68.39 per cent of the candidates scored 2 to 4 marks and 31.61 per cent obtained 0 to 1.5 marks.

Statistical analysis shows that candidates who correctly identified the parts of the flower and its functions were competent at interpreting the picture. For example, in item (i), candidates correctly identified the part of the flower labelled by letter A, which is the *stigma.* They understood that stigma is the part of the flower that receives pollen grains for pollination.

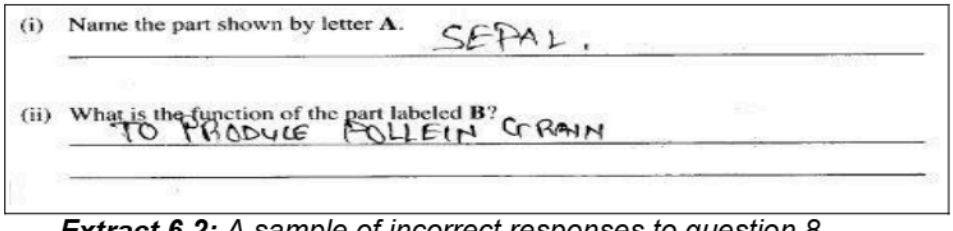
Moreover, in part (ii), the candidates were able to identify the part of the flower labelled by letter B, the *petal* which has a function of attracting insects or animals for pollination. Extract 6.1 is the sample of a correct response of the candidate to question 8.



Extract 6.1: *A sample of correct responses to question 8*

Extract 6.1 shows a candidate's response who answered all items in this question incorrectly. The candidate was able to identify the labelled parts of the flower and its functions.

On the other hand, 31.61 per cent of the candidates were unable to respond correctly to parts (i) and (ii). These candidates could not identify the parts of the flower and its functions. For instance, in part (i), where the correct answer was *stigma*, they gave different responses such as style, stamen and petal. In addition, they failed to explain the function of the part labelled B, which is the *Petal.* The function of the petal is to attract birds/insects and animals for pollination; however, they provided irrelevant answers, as attaching a flower to the plant or branch, and for reproduction, which are the functions of the receptacle and pistil, respectively. Extract 6.2 is the sample of an incorrect response of the candidate to question 8.



Extract 6.2: *A sample of incorrect responses to question 8*

3.0 ANALYSIS OF THE CANDIDATES' PERFORMANCE IN EACH COMPETENCE

The Science and Technology Examination for year 2025 assessed three types of competencies as stipulated in the 2016 syllabus of Science and Technology. Among the assessed competences, the candidates performed well in Maintaining Health and Environment (85.03%), and Applying Fundamentals of Science and Technology (75.30%) and had average performance in Performing Investigations and Discoveries in Science and Technology (49.10%).

Statistical analysis of performance for each question shows that questions 1 and 3 on the competency of Maintaining Health and the Environment had very good performance of 88.23% and 81.83%, respectively. However, question 7 from the competency of Performing Investigations and Discoveries in Science and Technology had a poor performance of 32.38%.

Further analysis of the candidate's performance reveals that performance in the competencies of Applying Fundamentals of Science and Technology and Maintaining Health and Environment increased by 4.23% and 29.9%, respectively. Nevertheless, the competency of Performing Investigations and Discoveries in Science and Technology has decreased by 9.37% compared to 2024. A summary of the performance statistics for each competency is shown in the Appendix.

4.0 CONCLUSION AND RECOMMENDATIONS

4.1 CONCLUSION

Generally, the candidates' performance in the 2025 Primary School Leaving Examination (PSLE) in each competency of the Science and Technology subject was good, as 69.81 per cent of the candidates passed. Analysis shows that candidates performed better (88.23%) in the specific competency of *Following the*

Principles of Hygiene for Good Health and Environment. This competency was examined in question 1. Nevertheless, 32.38 per cent were incompetent in *Identifying Theories of Science and Technology* examined in question 7. This implies that the candidates lacked knowledge of the assessed concepts.

4.2 RECOMMENDATIONS

To improve the performance of the candidates in the examined competencies, the following are recommended:

(i) In the teaching and learning process, pupils should be guided to conduct many scientific experiments across various concepts, for example, experiments involving living organisms such as plants and those involving equipment to enhance their thinking abilities and enable them to come up with solutions to the challenges they encounter during their discoveries.

(ii) When teaching the specific competence of *Types of energy and their uses*, teachers are advised to use real materials, such as different wires, bulbs and circuits during instructions.

(iii) Teachers should guide pupils by giving regular exercises to strengthen their mastery of various concepts, especially questions related to calculations and the application of different scientific principles.

(iv) When teaching the concepts of complex machines, teachers are advised to use available machines in their environment or invite experts who work with various machines or to conduct educational field visits to various places where such machines are used, to gain more skills and knowledge.

APPENDIX

THE COMPARISON OF THE CANDIDATES' PERFORMANCE IN EACH COMPETENCY IN PSLE 2025 AND 2024

S/N	Specific Competence	PSLE 2025				PSLE 2024			
		Question Number	Performance in each Question (%)	Average Performance on each Competence (%)	Remarks	Question Number	Performance in each Question (%)	Average Performance on each Competence (%)	Remarks
1.	Investigating things in the environment	2	62.68	49.10	Average	1	74.30	58.47	Average
2.	Identifying Scientific and Technological Theories	7	32.38			8	55.40		
3.	Identifying various types of energy and their uses	6	52.25						
4.	Identifying various systems of the human body	1	88.23			2	96.40		

5.	Following health principles for good health	3	81.83	85.03	Good	5	23.30	55.13	Average
6.	Following principles of hygiene for good health and environment					4	45.70		
7.	Performing scientific experiments correctly	8	68.39	75.30	Good	3	96.20	71.07	Good
8.	Mastering of scientific skills	5	76.94			7	35.30		
9.	Using Information and Communication Technology (ICT)	4	80.56			6	81.70		