



SOUTH AFRICAN COMPREHENSIVE ASSESSMENT INSTITUTE  
SUID-AFRIKAANSE KOMPREENSIEWE ASSESSERINGSINSTITUUT

## Adult Basic Education and Training (ABET)

### Summative Assessment

**Natural Science: NQF Level 1**

**Examination Session: June 2023**

**Total Marks: 100 Marks**

**Time: 3 Hours**

**Number of Pages: 18 Pages**

### Learner Information

**Candidate Number**

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**Centre**

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**Date**

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## EXAMINATION RULES FOR CANDIDATES

1. Candidates are bound in all matters relating to the examination to obey the instructions of the chief invigilator. The chief invigilator, where relevant, determines the dress code.
2. Candidates must be identified before they are permitted to write an examination. Identity document must be produced when required. All candidates are to sign the attendance register.
3. Candidates will not be admitted to the examination room if they arrive an hour or more after the start of the examination. Candidates who have finished answering an examination paper within fifteen minutes of stopping time will not be allowed to leave the examination room, provided there are still candidates writing.
4. Candidates must occupy the places first allocated to them for the entire duration of the examination and for all other examination sessions, unless otherwise directed by the chief invigilator.
5. No explanation of examination questions may be asked or given by any person.
6. No candidate is allowed to leave the examination room within the first hour of the examination, except in an emergency and under supervision.
7. A candidate may only be allowed to leave the examination room in the case of an emergency or to go to the toilet, and in these cases, this must be done under supervision.
8. As soon as a candidate hands in his or her answer script, he or she must leave the examination room.
9. A candidate must carefully read and comply with the instructions, which appear in his or her question paper and the examination timetable.
10. A candidate is not allowed to assist another candidate or try to assist him or her or communicate with another candidate. Should this occur, it would constitute an irregularity. Invigilators are expressly forbidden from assisting candidates in the answering of questions.
11. All questions must be directed to the invigilator.
12. A candidate may not cause a disturbance in the examination room or behave in an improper or unseemly manner.
13. A candidate may not disregard the instructions of the invigilator or may not conduct themselves in a manner that is in conflict with the instructions of the chief invigilator.
14. The following are not allowed next to the candidate in the examination room: suitcases, school bags, Walkmans, CD players, cellphones, books, dictionaries, notes, sketches or paper other than the official examination material distributed by the chief invigilator. Slide-rules and non-programmable, silent calculators may be used, unless expressly prohibited in the question paper. Pens, erasers, rulers, etc. should be kept in transparent containers / bags. No borrowing is allowed. Wristwatch alarms must be switched off.
15. Candidates should be informed that the possession of notes constitutes an irregularity regardless of whether or not the notes are used. The excuse that a candidate has forgotten or was not aware that he or she has the unauthorised material listed in paragraph 14 in his or her possession will not be accepted.
16. No examination answer books (or part of an answer book), whether used or unused, may be removed from the examination room. Should this occur, it will be considered an irregularity and the candidate will receive NO credit for the examination. Should a candidate write the wrong subject or wrong grade of a subject, this will be a technical irregularity and will lead to the candidate's results being blocked / cancelled / delayed.
17. Should a candidate miss an examination due to illness, a valid doctor's certificate must be given to the chief invigilator. A Certificate will not be awarded to candidates who miss an examination.
18. Any candidate who disregards these rules or the instructions of the chief invigilator or his / her assistants, will have committed an offence in terms of the Regulations [Regulation 6 2(a) and (b)] or a contravention of the Rules [Rule 3(2)].

## INSTRUCTIONS

1. This question paper consists of **TWO** sections.
2. **All** sections are compulsory.
3. Answer **ALL** the questions in Section A and Section B.
4. Answer all the questions in the space provided.
5. Write in a blue or black pen only.



## SECTION A

### Question 1

1.1 Various possible options are provided as answers to the following questions. Choose the answer and ENCIRCLE only the letter [A-D].

1.1.1 A plant undergoes the transpiration process to \_\_\_\_\_.

- A. make its leaves greener for photosynthesis.
- B. produce oxygen for other living organisms.
- C. cool itself down in hot weather.
- D. absorb moisture from the atmosphere. (2)

1.1.2 A disadvantage of using a greenhouse for planting crops.

- A. Crops are planted outside their seasons
- B. It needs constant monitoring and care
- C. Crops get rotten quickly
- D. It traps too much heat for the crops (2)

1.1.3 Which of the following is needed to separate a mixture of flour, river sand and iron filings during an experiment?

- A. Filter paper and magnet
- B. Sieve and magnet
- C. Sieve and filter paper
- D. Hand sorting and magnet (2)

1.1.4 The ratio of hydrogen and oxygen by mass in water.

- A. 1:8
- B. 1:4
- C. 2:1
- D. 1:2 (2)

1.1.5 The rate of growing mould on bread can be increased by...

- A. placing the bread out in the sun.
- B. leaving the bread inside an opened bread bin.
- C. leaving the bread packet unsealed.
- D. placing the sealed bread in a closed bread bin. (2)

1.1.6 The resistance of an electrical component is measured in \_\_\_\_\_.

- A. volts.
- B. amperes.
- C. ohms.
- D. seconds. (2)

1.1.7 Which organelle is NOT found in an animal cell?

- A. Chloroplast
- B. Vacuole
- C. Chromosome
- D. Cytoplasm (2)

1.1.8 The main function of radiography is to\_\_\_\_\_.

- A. Check a patient's blood work.
- B. test a person's HIV-AIDS status.
- C. repair a person's fractured bones.
- D. help view the internal body structure. (2)

1.1.9 Which statement is TRUE about resistors connected in series?

- A. They divide the total potential difference of the battery
- B. They divide the current flowing through them
- C. They increase the voltage in the electric circuit
- D. Their total resistance is lesser than the resistance of the biggest resistor (2)

1.1.10 The air consists of \_\_\_\_\_ oxygen.

A. 78%

B. 37%

C. 21%

D. 80%

(2)

**Total Marks for Question 1.1**

**[20]**

1.2 Indicate whether the following statements are **TRUE** or **FALSE**.

Choose the answer and write only **TRUE** or **FALSE** in the spaces provided.

1.2.1 Respiration takes place inside the nucleus of a cell.

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(1)

1.2.2 The results of an experiment can be tabulated.

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(1)

1.2.3 Tides are caused by the gravitational pull of celestial bodies.

---

(1)

1.2.4 Cameras are used in the exploration of aquatic ecosystems.

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(1)

1.2.5 Artificial insemination is used to cure cancer.

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(1)

**Total Marks for Question 1.2**

**[5]**

- 1.3 Choose a statement from COLUMN B that matches a term in COLUMN A. Write only the letter (A – F) **UNDER** the question number (1.3.1 – 1.3.5) in the table below.

	<b>COLUMN A</b>		<b>COLUMN B</b>	
1.3.1	Antibiotics	<b>A</b>	Provides nutrients to the soil	(1)
1.3.2	Colloids	<b>B</b>	Separate metal substances from mixtures	(1)
1.3.3	Stainless Steel	<b>C</b>	They treat bacterial infections	(1)
1.3.4	Magnet	<b>D</b>	They treat flu infections	(1)
1.3.5	Organic fertilizer	<b>E</b>	Commonly used in cutlery making	(1)
		<b>F</b>	A mixture of oil and water	

	<b>1.3.1</b>	<b>1.3.2</b>	<b>1.3.3</b>	<b>1.3.4</b>	<b>1.3.5</b>
<b>Column B</b>					

**Total Marks for Question 1.3**

**[5]**

**Total for Section A: 30 Marks**  
**SECTION B is on the next page.**

**SECTION B****QUESTION 2: LIFE AND LIVING**

2.1 Read the passage and answer the questions that follow.

Tuberculosis – TB is an infectious chronic disease that mainly affect the lungs. It is commonly spread from person to person through tiny droplets released into the air through coughs and sneezes.

Doctors normally use stethoscopes and x-ray machines to examine the extent of TB infection in patients.

*Source:healthjournal.org*

2.1.1 Is tuberculosis caused by a virus or bacteria? (2)

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2.1.2 What is the main function of an X-ray? (2)

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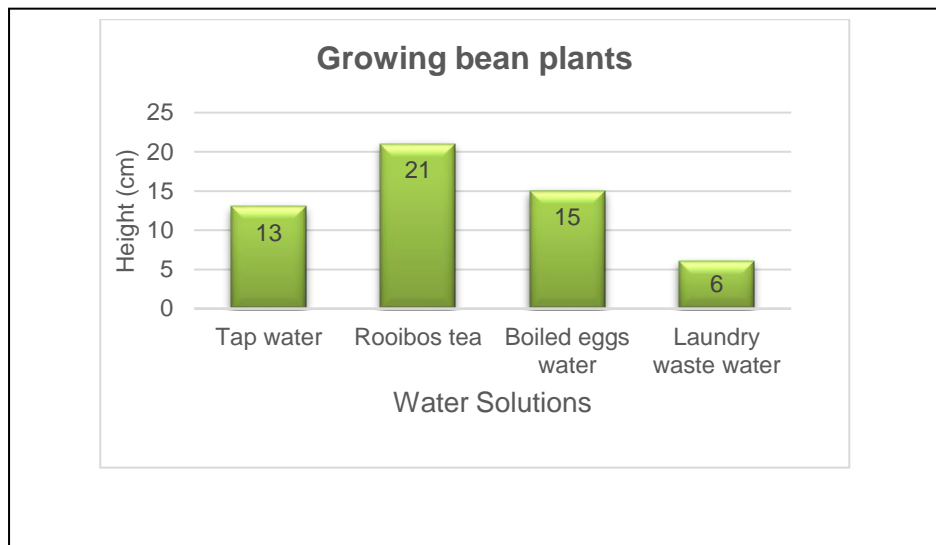
2.1.3 List THREE common symptoms of tuberculosis. (3)

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2.2 Study the graph and answer the questions that follow.



2.2.1 What is the name of the graph above? (1)

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2.2.2 Give TWO examples of instruments you would use to measure the height of bean plants. (2)

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2.2.3 Identify the water solution that provides ... (1)

(a) the soil with insecticide's properties.

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(b) bean plants with organic nutrients. (1)

---

2.3 Read the passage on the digestive system and answer the questions.

The food humans eat gets digested in two ways, namely, mechanical and chemical. It is from these digestions that the energy and nutrients needed by the body is released.

*Adapted from Study Matters-Life and Living Module*

2.3.1 Name the part of the human body in which food is digested...

(a) mechanically. (1)

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(b) chemically. (1)

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2.3.2 Differentiate between mechanical and chemical digestion. (2)

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2.3.3 Gastric juices found in the stomach are acidic. (1)

Do these juices make the pH level of the stomach less or greater than 7?

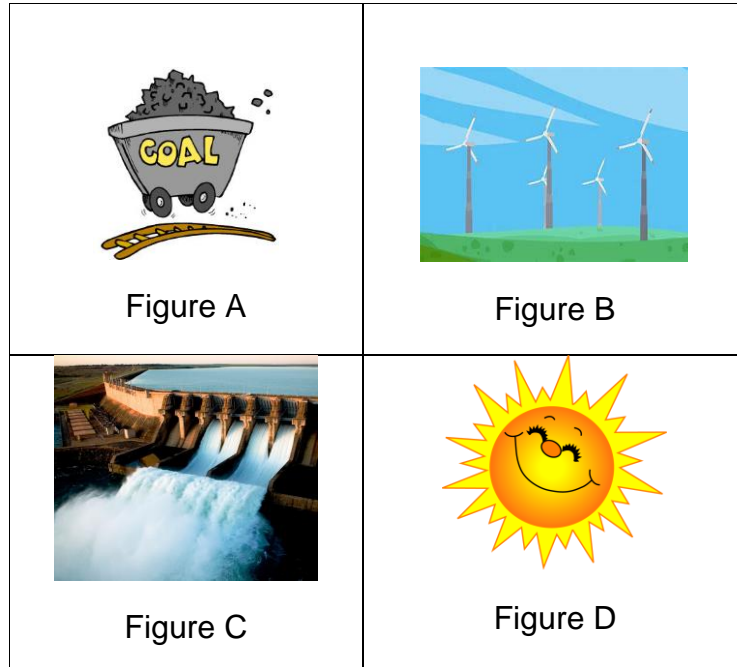
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**Total Marks for Question 2**

**[17]**

**QUESTION 3: ENERGY AND CHANGE**

3.1 Study the diagrams and answer the questions.



3.1.1 Name the energies represented in Figures B and C. (2)

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3.1.2 Explain why coal is a non-renewable source of energy. (2)

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3.1.3 What is the name of a device used in our homes to absorb energy from Figure D to produce electrical energy? (1)

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3.2 A simple electric circuit is set up using two cells of 1.5 volts each, a small light bulb and conducting wires.

3.2.1 Draw diagrams to represent the following electric components in the spaces provided:

(a) A cell (1)

(b) A light bulb (1)

3.2.2 What would you observe regarding the light intensity of the light bulb when two cells are connected in series? (2)

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3.2.3 Will you observe the same light intensity as in 3.2.2 if the cells are now connected in parallel? Explain the reason for your answer. (3)

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3.3 Read the passage and answer the questions.

The use of cellphones in South Africa has been on the increase in recent times. This increase is as the result of ever improving technology which many people are easily adapting to for their daily living whether personally or commercially.

Source:<http://technosurvey.com>

3.3.1 Name ONE social media application that can be accessed with a smartphone. (1)

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3.3.2 List TWO components of a cellphone that are recyclable. (2)

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3.3.3 Which form of energy is converted into electrical energy in a cellphone? (1)

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3.3.4 Name TWO careers that can be pursued in telecommunications. (2)

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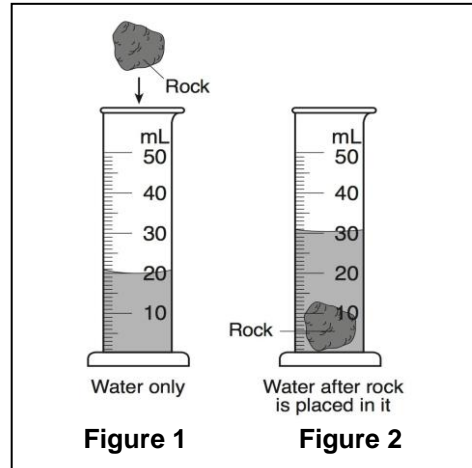
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**Total Marks for Question 3**

**[18]**

**QUESTION 4: MATTER AND MATERIALS**

- 4.1 Study the diagram below which shows the effect of a rock on water and answer the questions that follow.



Source:

<https://www.brainly.com>

- 4.1.1 What is the name of the glassware shown in the diagram? (1)

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- 4.1.2 Which scientific concept is illustrated by the diagram? (1)

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- 4.1.3 Record the readings of the water level (in mL) in ... (2)

(a) Figure 1.

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(b) Figure 2.

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- 4.1.4 How much volume (in mL) is occupied by the rock in Figure 2? (2)

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- 4.2 An object has a mass of 7.2 g and a volume of 4 cm<sup>3</sup>. Calculate the density of the object. (2)

**Use the formula:**      Density =  $\frac{\text{mass}}{\text{volume}}$

- 4.3 Read the passage and answer the questions that follow.

Leather is made from the hide (skin) of almost any animal including pigs, sheep, goats and crocodiles. However, the most common hide used is that from cows. Shoes are examples of products made from leather.

*Source: <http://mohileather.com>*

- 4.3.1 Name an animal from which most leather is produced. (1)

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- 4.3.2 Give TWO other examples of products made from leather. (2)

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- 4.3.3 Does the trading of animal hide boost the local people's lives economically? Justify your answer. (3)

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4.4 Classify the following fields of study as either Natural or Non-Natural.

4.4.1 Criminology (1)

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4.4.2 Homeopathy (1)

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4.4.3 Food technology (1)

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**Total Marks for Question 4**

**[17]**

**QUESTION 5: EARTH AND BEYOND**

5.1 Read the passage below and answer the questions that follow.

Very high in the sky there are artificial and natural satellites. Satellites move around larger objects like planets at different times for various functions and purposes. The Moon is a satellite that moves around the Earth in 24 hours and emits light on the Earth during the night.

*Source: www.nasa.gov*

5.1.1 What type of a satellite is the Moon? Artificial or Natural. (1)

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5.1.2 How many days does it take the Earth to revolve around the Sun? (2)

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5.1.3 The Global Positioning System (GPS) is an artificial satellite. (2)  
State ONE of its functions that people make use of.

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5.2 Study the table and answer the questions that follow.

Mineral	Mohs Relative Hardness Scale	Scratch Test	Other Facts
Talc	1	Scrapeable with fingernail	Used in talcum powder
Gypsum	2	Scrapeable with fingernail	Ingredient of plaster
Calcite	3	Scratch with a copper coin	Used in cement
Fluorite	4	Scratch with a nail	Used in toothpaste
Apatite	5	Scratch with a nail	Mineral in bone
Feldspar	6	Scratch with a steel file	Ingredient in glass, etc.
Quartz	7	Scratches window glass	Used in glass, etc.
Topaz	8	Scratches glass	Gemstone
Corundum	9	Scratches topaz	Rubies & Sapphires
Diamond	10	Scratches corundum	"Woman's best friend"

*Source: <https://geology.com>*

5.2.1 What is the main aim of testing the minerals? (2)

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5.2.2 Identify THREE metallic tools used in the investigation. (3)

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5.2.3 Which of the minerals ...  
(a) is the softest? (1)

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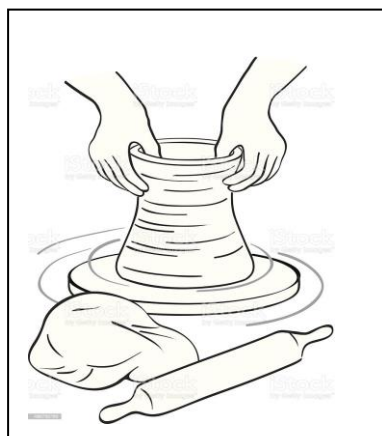
(b) can scratch a glass? (1)

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5.2.4 What is fluorite used for? (1)

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5.3 Study the picture of pottery and answer the questions that follow.



Source: Creativeartsstudio

5.3.1 Why is clay a much-preferred soil to use in pottery? (2)

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5.3.2 Name ONE product made using pottery. (1)

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5.3.3 Explain the use of the product you mentioned in 5.3.2. (2)

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**Total Marks for Question 5**

**[18]**

**Total for Section B: 70 Marks**

**TOTAL MARKS: 100 MARKS**

**END OF THE EXAMINATION**

**For Office Use Only**

Section	Question	Maximum Mark	Learner's Mark	Moderated Mark
<b>A</b>	Question 1.1	20		
	Question 1.2	5		
	Question 1.3	5		
	<b>Total: A</b>	<b>30</b>		
<b>B</b>	Question 2	17		
	Question 3	18		
	Question 4	17		
	Question 5	18		
	<b>Total: B</b>	<b>70</b>		

<b>Grand Total (A + B)</b>	<b>100</b>
<b>Learner's Total (A + B)</b>	
<b>Percentage</b>	
<b>Final Grading</b>	

**Name and Surname of Marker**

\_\_\_\_\_

**Date of Marking**

\_\_\_\_\_

**Name and Surname of Umalusi Official**

**Date of Marking**

**Name and Surname of Moderator**

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**Date of Moderation**

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