BERGVLIET HIGH SCHOOL

Grade 9 Technology Processing and Environmental Decisions

Informal Test 2 | 30 marks | Suggested working time 40 minutes

Name: _____ Class: _____ Date: _____

Answer all questions in the spaces provided. Use a pencil and ruler for drawings. Show working and units in calculations. This is preparation for the November examination.

Question 1 Multiple Choice

1.1 Which metal commonly coats steel during galvanising? **(1)**

- **A.** Copper
- **B.** Zinc
- **C.** Tin
- **D.** Lead

Answer: _____

1.2 A thermosetting plastic is strongly reheated. Which is generally expected? **(1)**

- **A.** Repeated remelting
- **B.** Becomes a thermoplastic
- **C.** Decomposition rather than remoulding
- **D.** Returns to its original uncured state

Answer: _____

1.3 What can plastic code 7 identify? **(1)**

- **A.** Only PET
- **B.** Guaranteed food safety
- **C.** Other polymers or combinations
- **D.** Every locally recyclable plastic

Answer: _____

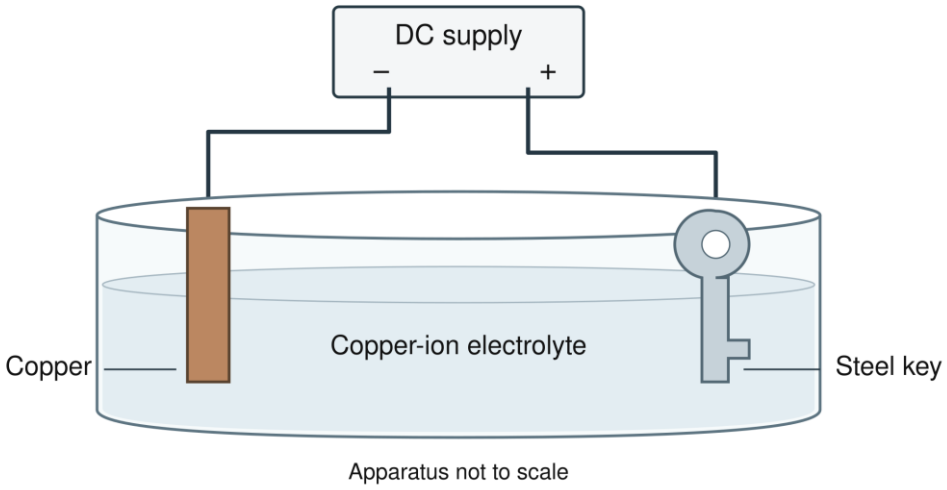
1.4 Why does drying help preserve food? **(1)**

- **A.** Always sterilises it
- **B.** Reduces water available to microorganisms
- **C.** Adds acid
- **D.** Removes every hazard

Answer: _____

Question 2 Preserving Metals

Copper is to be deposited on the steel key. One connection error is present. The illustrated apparatus is not to scale.



2.1 State ONE function of the copper-ion electrolyte. **(1)**

2.2 Identify the connection error and explain how to correct it. **(2)**

Question 2 Preserving Metals Continued

2.3 Why should oil be removed from the key before electroplating? **(1)**

After correction, clean keys are plated at constant current, exposed area and electrolyte conditions.

Time	3 min	6 min	9 min
Mass gained	0.03 g	0.06 g	0.09 g

2.4 State the trend and support it by comparing TWO results. **(2)**

2.5 Does the mass-gain table prove that a copper-coated key will never corrode outdoors? Give a reason. **(1)**

Question 3 Food Preservation

3.1 Name the preservation method using a sufficiently acidic vinegar solution. **(1)**

3.2 State ONE suitable storage condition for dried grain. **(1)**

Two batches of pear slices are dried at the same temperature and airflow. The supplied investigation samples are not for tasting.

Time	Thin slices	Thick slices
Start	120 g	120 g
After 3 hours	54 g	84 g

3.3 Calculate the mass lost by EACH batch. **(2)**

3.4 Use the results to identify the faster-drying batch and explain why slice thickness affects drying. **(2)**

3.5 Does mass loss alone prove these samples are safe to eat? Give a reason. **(1)**

Question 4 Plastics Collection Case Study

A sports club collected 100 kg of used plastic containers. The contractor accepted 75 kg and rejected 25 kg of contaminated or unidentified material. Receipts show accepted mass; a processing report is still outstanding. The club proposes the claim “All our plastic has been recycled.”

Two plans for the next collection are estimated below. The club needs at least R30 left per cycle to maintain equipment. Figures cover the same collected mass and period.

Estimate	Plan A: better labels	Plan B: supervised sorting
Mass accepted	75 kg	85 kg
Mass rejected	25 kg	15 kg
Income	R225	R255
Costs	R165	R220
Money left	R60	R35

4.1 Give TWO reasons why the club’s claim is not supported by the evidence. **(2)**

Reason 1

Reason 2

4.2 Choose a plan. Give ONE reason about rejected mass and ONE about money left for equipment. **(2)**

My plan and reason about rejected mass

Reason about money

4.3 Identify ONE disadvantage of your plan and suggest how to manage it. **(2)**

Disadvantage

How to manage it

Question 5 Packaging Case Study

A farm stall tested recycled-paper bags and woven-polypropylene bags with a 4 kg load. Both held a dry load. In a wet test the paper bag tore; the woven bag held. Woven bags cost more initially, but customers who retained them used them on many visits. Both materials require resources and energy to produce. Local collection accepts clean paper but not woven polypropylene. These are supplied trial observations, not ratings for every product.

5.1 Which tested bag is more suitable in wet conditions? Support your choice with evidence. **(2)**

5.2 Explain ONE way repeated use can reduce the number of discarded bags. **(1)**

5.3 Give ONE reason why “Paper is always the best environmental choice” is too strong a claim. **(1)**

5.4 Suggest TWO different actions the stall could take to reduce discarded bags. **(2)**

Action 1

Action 2

TOTAL **30 MARKS**