

MARKING SCHEME

K.J.S.E.A – GRADE 9 INTEGRATED SCIENCE PAPER 2

TASK 1 (15 MARKS)

(a) Type of Water

Water Sample	Observation	Type of Water
Sample K	Rich, thick lather formed immediately	Soft water
Sample L	Greyish-white curds (scum) formed; no bubbles	Hard water
Sample M	Formed lather after a very long time of shaking	Hard water
Sample N	Persistent foam/lather formed easily	Soft water

(b)

Solution Y was most likely:

Soap solution / liquid soap detergent

(c)

Sample L would require the most soap for washing clothes because it forms scum and does not lather easily due to the presence of dissolved calcium or magnesium salts.

(d)

(i)

The type of hardness removed by boiling is:

Temporary hardness

(ii)

One chemical responsible is:

Calcium hydrogencarbonate

(Accept: Magnesium hydrogencarbonate)

(e) Disadvantages of hard water

- i. It forms scum with soap, wasting soap.
- ii. It causes scaling in kettles, pipes, and boilers.

(f)

- i. Vessel used to hold the samples:

Boiling tube / Test tube

- ii. Instrument used to measure 5 cm³:

Measuring cylinder

(Accept: Pipette / Syringe)

(g)

Water samples should not be tasted because they may contain harmful chemicals or disease-causing microorganisms that can affect health.

TASK 2 (15 MARKS)

(a)

i. Producers

- Maize plants
- Grass

ii. Abiotic Factors

- Soil
 - Sunlight
- (Accept: Small pond/water)*

(b) Food Chain

Maize/Grass → Grasshopper → Frog → Snake

(c)

If all frogs were killed, the population of grasshoppers would increase because their predator would be absent.

(d)

(i)

The type of pollution observed is:

Water pollution

(ii) Ways of managing plastic waste

i. Recycling plastic materials.

ii. Proper disposal of waste in bins.

(Accept: Reusing plastics / Community clean-up activities)

(e) Equipment for recording findings

i. Notebook

ii. Camera

(Accept: Pencil / Clipboard / Mobile phone)

(f) Rules of conduct during nature walk

i. Avoid destroying plants and habitats.

ii. Do not make excessive noise or disturb animals.