Natural Sciences and Technology · Grade 6

Memorandum · Term 1–2

TOTAL
66
MARKS

Marking guidelines

1. Award the full mark for a correct answer, even if the learner words it differently.
2. Accept any scientifically correct answer, including one not given in the memorandum.
3. Where a question asks for two or more items, award one mark per correct item.
4. For diagrams, award the mark if the label points at the correct part, even with a spelling error.
5. Do not deduct marks for spelling unless the word takes on a different scientific meaning.

Question	Answer	Marks	Marking note
QUESTION 1 · Multiple choice questions · 6 marks			
1.1	a. Carbon dioxide	**1**	
1.2	b. Producer	**1**	
1.3	c. Decomposers	**1**	
1.4	a. Solution	**1**	
1.5	b. Filtering	**1**	
1.6	c. Carbohydrates	**1**	
QUESTION 2 · Short questions · 9 marks			
2.1	1. False 2. True 3. True 4. True	**4**	*1 mark each.*
2.2	1 = C; 2 = A; 3 = B	**3**	*1 mark each.*
2.3	Water, air, soil, sunlight, rocks, temperature.	**2**	*Any two. 1 mark each.*
QUESTION 3 · Photosynthesis and food webs · 10 marks			
3.1	A = flower; B = leaf; C = stem; D = roots	**4**	*1 mark each.*
3.2	Carbon dioxide + water (in sunlight) → glucose (food) + oxygen	**3**	*1 mark for the inputs, 1 for the outputs, 1 for sunlight as the energy source.*

Question	Answer	Marks	Marking note
3.3	Decomposers break down dead plants and animals and return the nutrients to the soil. Without them dead material would pile up and the plants would not get the nutrients to grow — then the whole web collapses.	**3**	*1 mark for breaking down, 1 mark for nutrients returned, 1 mark for the consequence.*
QUESTION 4 · Ecosystems and adaptations · 9 marks			
4.1	Block 2 = grass or a plant. Block 4 = a lion, jackal or other meat eater.	**2**	*1 mark each.*
4.2	The birds eat the locusts. The poison builds up in their bodies and can make them ill or kill them. On top of that there are few locusts left to eat, so the birds lose their food.	**3**	*1 mark for poison through the chain, 1 mark for the effect on the birds, 1 mark for the loss of food.*
4.3	Thick fleshy leaves or stem to store water; thorn-like leaves to reduce water loss; long deep roots to reach underground water; a waxy layer on the leaves to reduce water loss; small leaves with little surface area so that less water evaporates.	**4**	*1 mark per adaptation WITH a reason.*
QUESTION 5 · Matter, mixtures and separation · 10 marks			
5.1	A = funnel; B = filter paper; C = beaker (with the filtrate)	**3**	*1 mark each. Accept beaker or filtrate for C.*
5.2	The clear liquid caught in the beaker is called the filtrate.	**2**	*1 mark for 'filtrate', 1 mark for a full sentence.*
5.3	The salt is dissolved in the water, so the salt particles are too small and pass through the filter paper with the water. You must evaporate the water instead.	**2**	*1 mark: the salt is dissolved in the water; 1 mark: the salt particles are so small they pass through the filter paper with the water. (Accept mention of evaporation as extra.)*
5.4	A = solid; B = liquid; C = gas	**3**	*1 mark each.*
QUESTION 6 · Nutrients and processed food · 6 marks			
6.1	energy; growth and repair; stored energy and warmth. 1 mark each.	**3**	
6.2	Any two: to make it last longer; to make it safer to eat; to make it easier to transport; to change its taste or texture; to make it quicker to prepare.	**2**	
6.3	Any one: drying; canning; freezing; salting; pickling; adding preservatives.	**1**	

Question	Answer	Marks	Marking note
QUESTION 7 · Solids, liquids and gases · 16 marks			
7.1	evaporation; condensation; freezing (accept solidifying). 1 mark each.	**3**	
7.2	Solid: packed closely in a fixed pattern, only vibrating (1). Liquid: close together but able to slide past one another (1). Gas: far apart and moving freely in all directions (1).	**3**	
7.3	No more solute can dissolve in that amount of solvent (1); extra solid stays undissolved at the bottom, even when you stir (1).	**2**	
7.4	Any two: stir it; heat the water; crush the sugar into smaller grains.	**2**	
7.5	Any three with an example: filtering — sand from water; evaporation — salt from seawater; a magnet — iron filings from sand; sieving — stones from sand; chromatography — the colours in a felt-tip pen.	**3**	
7.6	A solution is a special kind of mixture in which one substance (the solute) dissolves completely in another so that you can no longer see it; in an ordinary mixture you can still see the different parts. Both can be separated physically (1). Mixture, e.g. sand and stones (1). Solution, e.g. sugar in water (1).	**3**	*1 mark for the difference, 1 mark for a mixture example, 1 mark for a solution example.*

Total **66 marks**



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