

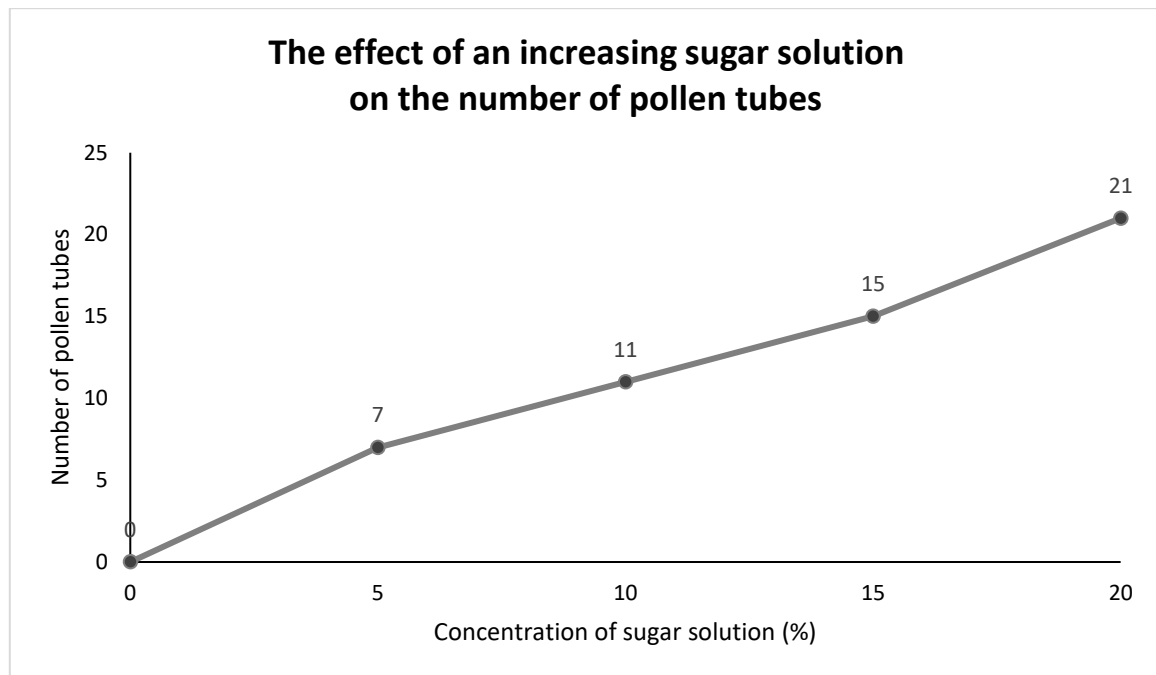
MEMORANDUM
QUESTION 1

- 1.1 Antibiotic B is more effective✓ in destroying bacteria than antibiotic F✓ OR
Antibiotic B has a larger area of no bacterial growth✓ compared to antibiotic F✓ (2)
- 1.2 (a) E✓ (1)
(b) Antibiotic E is the next most effective antibiotic after antibiotic B✓ as shown by the second largest zone of no bacterial growth✓ (2)
- 1.3 (a) A✓ and C✓ (2)
(b) Both antibiotics A and C do not destroy any bacteria✓ as there is no clear area showing no bacterial growth✓ (2)
- 1.4 (a) Fungal spores could release antibiotics✓ to kill bacteria in the wounds✓. (2)
(b) Fungal spores✓ could cause fungal diseases/infection in the wounds✓themselves. (2)
- 1.5 – Antiseptics are not taken orally/intra-venously✓/ antibiotics are taken orally/intravenously
– Antiseptics are used externally on the wound/cut✓/ antibiotics are used internally
– Antiseptics can be bought without a prescription✓ / antibiotics require prescriptions
– Antiseptics do not need to be used for a certain length of time✓ / Antibiotics must usually be used in a certain time/course must be completed
– Antiseptics are not microbe-specific/kill a broad range of microbes✓ / Antibiotics are bacteria-specific/kill only bacteria
– Antiseptics are not a targeted treatment ✓/ Antibiotics are a targeted treatment
(only first 2)
(15)

QUESTION 2

- 2.1 The higher the sugar concentration the more pollen grains will germinate to form pollen tubes ✓✓. OR
The lower the sugar concentration the more pollen grains will germinate to form pollen tubes ✓✓. OR
The sugar concentration influences the number of pollen grains that germinate to form pollen tubes ✓✓. (2)
- 2.2 To determine whether sugar does have an influence on the germination of pollen grains✓. Distilled water was used as a control✓ (2)
- 2.3 – Use the same number of pollen grains in each concentration of sugar.
– Use the same type of sugar in each solution.
– Allow the same time frame in the incubator.
– Used the same incubator.
– The same species of pollen grains/same type of plant/pollen from the same plant.
– Same volume of solution added to each slide.
(only first 2)

2.4



CRITERIA	ELABORATION	MARK
Correct type of graph (T)	Line graph	1
Caption of graph (C)	Both variables included	1
Axes labels (L)	X- and Y-axis correctly labelled with units	1
Scale of axes (S)	Equal intervals	1
Plotting of co-ordinates (P)	– 1 to 3 co-ordinated plotted correctly – All 4 co-ordinates plotted correctly	1 2

(6)

2.5 $\frac{21-11}{11} \checkmark \times 100 \checkmark = 91 \checkmark \%$

(3)

(15)

QUESTION 3

3.1 0 – 2 arbitrary units✓ (2)

3.2 photosynthesis ✓ (1)

3.3 chloroplast✓ (1)

3.3 No photosynthesis is taking place✓
Only respiration is taking place✓ (2)

3.4 6,2✓ mg/50cm³✓ (2)

3.5 – water✓
– temperature✓

(only first 2)

(10)

QUESTION 4

- Bryophyta are most poorly adapted to life on land of all the divisions✓ / Angiosperms are the best adapted to life on land
- Bryophyta have no cuticle✓ to protect against water loss
- Pteridophyta, Gymnosperms and Angiosperms all have a cuticle ✓
- Bryophyta do not have true roots✓ that anchor the plant in the soil to absorb water and minerals /
- In Pteridophyta the gametophyte does not have true roots, but the sporophyte does✓
- All generations of Gymnosperms and Angiosperms have true roots✓
- Bryophyta do not have xylem or phloem✓ to transport water and food or support the plant body
- In Pteridophyta the gametophyte does not have xylem or phloem, but the sporophyte does✓
- All generations of Gymnosperms and Angiosperms have xylem and phloem✓
- Bryophyta and Pteridophyta produce spores✓ that are not protected from harsh weather and dehydration
- Gymnosperms and Angiosperms produce seeds✓ that are protected from harsh weather and dehydration
- Bryophyta and Pteridophyta use water for reproduction/dispersal of spores✓
- Gymnosperms use wind for reproduction/dispersal of seeds✓
- Angiosperms use many pollinating agents for reproduction/dispersal of seeds✓

(any 10)

TOTAL: [50]