

SECTION B - MEMORANDUM

- 1.1. *Paramecium* species *aurelia* and *caudatum* will grow better in isolation compared to a mixed culture.

OR

When two *paramecium* species are grown together the one will outcompete the other through competitive exclusion.

OR

Competitive exclusion will lead to one *Paramecium* species outcompeting the other in a mixed culture.

OR

As a result of limiting factors, e.g. food, the two *Paramecium* species will not be able to survive in the same environment, the one species will outcompete the other. (2)

- 1.2. (a) culture conditions / growing together or apart ✓ (1)
(b) number of *Paramecium* species ✓ / interaction between *Paramecium* species with regards to the sharing of resources (1)

- 1.3. Day 8 ✓

ANY ONE:

this is where a maximum number is indicated and it decreases thereafter ✓

Fluctuate around a maximum number ✓ (1+1)

- 1.4. Day 10 ✓ (1)

- 1.5. When the species was grown alone (any 2):

each one flourished ✓ under their own conditions and *P. caudatum* reached higher numbers ✓ but *P. Aurelia* was still more ✓.

When they were mixed (any 2):

Competitive exclusion ✓ occurs and *P. aurelia* suppressed the growth of *P. caudatum* ✓ / outcompeted/ no resource partitioning occurs ✓ (2+2)

- 1.6. Competitive exclusion ✓✓ (2)

- 1.7. *Paramecium aurelia* ✓ (1)

- 1.8. It will go extinct / die ✓ (1)

TOTAL SECTION B: [15]