

# GCSE BIOLOGY

Topic Paper: 7.1 Adaptations, interdependence and competition  
Part 1 & 2 Mark Scheme

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## MARK SCHEME



**66 Marks**



- M1.** (a) extremophile(s) 1
- (b) (i) common (periwinkle) and flat (periwinkle)  
*either order, both required* 1
- (ii) (common and flat) both live in the same habitat / area / named area  
*allow habitats overlap the most* 1
- (iii) any **two** from:
- would have wrong food
  - would otherwise be exposed to (specific) predators
  - cannot tolerate extended exposure to air **or** reduced submersion in seawater  
*allow cannot tolerate temperature / dehydration*
  - cannot tolerate high salt concentration (in rock pools)  
*allow low salt concentration (in rock pools)*
  - cannot compete with small periwinkle
- 2 **[5]**

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- (a) light and/or temperature too low in winter,  
increasing light in spring leads to increase in photosynthesis  
increasing temperature in spring leads to increasing metabolism/  
growth/reproduction  
*for 1 mark each* 3
- (b) they run out of minerals  
*for 1 mark* 1
- [4]**

- M3.** (a) 4 of:
- intensification due to need to improve efficiency of energy transfer;
  - has led to developing fast growing crop varieties;
  - native plants cannot compete with these;
  - for e.g. light/water/minerals;
  - effect of herbicides;
  - pesticides killing pollinating insects
- each for 1 mark*
- 4