

Unit 3 Sustainability & Interdependence

Key Area 5 Symbiosis Answers

1. A

2.

Mutualism	1
Gains nutrients/shelter from the coral OR better exposure to light	1
Each coral species only forms relationship with one algal species/narrow range of algal species OR both species have adaptations which allow the relationship	1

3.

Question		Acceptable Answer/s	Max Mark	Unacceptable Answer
a	i	Organism which benefits/gains energy /nutrients from the host AND damages / harms it OR at the expense of it	1	Benefits alone
a	ii	Mutualism / commensalism	1	
a	iii	Vector	1	
b	i	Population of flies would drop / reduce the number of offspring = 1 Therefore less flies to transmit disease / act as vectors / fewer flies transmitting / less flies to cause it = 1	2	Prevent population from increasing No offspring would be produced
b	ii	Introduce / release / bring in/ add in predator / parasite / disease / pathogen (to population of pest) OR examples	1	Natural enemies for parasite, predator etc Crop rotation
b	iii	Introduced predator eats/ eliminates/ wipes out /destroys other organisms/groups of species/ keystone species OR becomes invasive / a pest themselves OR Reduces biodiversity OR Other species which eat the pest/ tsetse fly could be eliminated/affected OR Infect other species with a parasite	1	Affects other species Destroy/ destruct food web

4. B

5.

Question		Acceptable answer(s)	Max Mark	Unacceptable answer
(a)	(i)	intimate/close coevolved relationship between two species	1	
(a)	(ii)	(oxpeckers) conserve/save energy in gaining food OR a stable/constant food supply OR gain food easily/reliably (1) zebra have parasites removed which saves energy/resources/nutrients OR prevent/reduces infection/disease transmission (1)	2	
(a)	(iii)	mutualism/mutualistic	1	
(b)	(i)	have (more) limited metabolism OR they obtain/rely on food/energy/nutrients/resources from hosts OR are degenerate	1	
(b)	(ii)	through resistant stages OR through vectors OR by being wind/water borne	1	secondary hosts

6. A

7.

Question	Expected Answer(s)	Max Mark	Additional Guidance
(a)	Parasite/it/ <i>Schistosoma</i> gets energy/gets nutrients/benefits/gains AND host/human is harmed (by loss of resources)	1	
(b)	Secondary host: (fresh water) snails 1 Benefit: allows development into free swimming parasite 1 OR allows them/immature parasites to complete life cycle	2	NOT - allow eggs to develop/parasites to mature
(c)	Prevent urine/faeces/eggs from entering (fresh) water OR stop people entering the affected water OR control the population of fresh water snails OR medication given to kill the eggs/mature parasite/parasite in humans	1	

8.

(a)	(i)	(female) mosquito	1	NOT - mosquito saliva NOT - male mosquito
	(ii)	Females/they need the <u>blood</u> for egg production OR males don't produce eggs so don't need <u>blood</u>	1	NOT - females need blood for eggs alone NOT - females need blood to carry eggs
(b)		(The host is harmed) by losing energy/nutrients/food OR (Host harmed as)parasite feeds off it/gains nutrients from it	1	NOT - host loses resources NOT - destroys liver/red blood cells
(c)		Method 1: Mosquito... discouraged/stopped from... biting/feeding/fewer people bitten AND it cannot spread parasite/disease/virus/bacteria OR Method 2: There are ...no/fewer...(parasites to transmit to the human/mosquito (1)	1	

9. D