Case study: Tropical rainforests and water and carbon cycles *3.1.1.6* ANSWERS

Q1	***True or False?***	
A	Madagascar is the fourth largest island in the southern hemisphere ***(World)***	**False**
B	Only around a fifth of the island is now forested	**True**
C	Population has tripled since 1960 ***(Increased by factor of 5)***	**False**
D	The rate of gulley erosion is seven times the average for the world	**True**
E	Over 3000 species face extinction because of environmental & climate change	**True**

Q2	**Match each term to the correct description**	
A	The distinctive animal that has seen 15 of its species go extinct	**Lemur**
B	Rainfall that occurs as moist winds off the sea rise up a range of mountains	**Orographic**
C	The forest that is the subject of a conservation focus for carbon credits	**Makira**
D	The valuable timber that is the cause of much destructive logging	**Ebony**
E	The international scheme to designate forests as carbon capture schemes	**REDD**

Select from: **REDD** **Ebony** **Orographic** **Lemur** **Makira**

Q3	**Tick which is the odd one out from each group of 6 terms**	
A	Sediment	Rainfall
	Carbon dioxide ✓	Soil loss
	Gulley erosion	Deforestation
Rainfall + deforestation → soil loss, gulley erosion and sediment. Part of the water, not carbon, cycle.		
B	Transpiration rate	Longer dry period
	Deforestation	Methane rise ✓
	Slash and burn	Water cycle
Slash & burn → deforestation → less transpiration → longer dry period. Part of water, not carbon, cycle.		
C	Atmospheric carbon rise	More evaporation
	More transpiration	Increase in water vapour
	Longer dry period ✓	Global warming
Atmos carbon rise → gl warming → more evap./ transpiration → increase in w vapour & prob more rain		
D	Commercial agriculture	Greater decomposition ✓
	Soil sealing	Exposed soils
	Loss of biomass	Greater runoff
Comm. agri → loss of biomass → exposed soil → soil sealing → greater runoff. Decomp not affected.		
E	Carbon credits	Carbon capture
	Conservation	Carbon cycle
	Condensation ✓	Carbon sequestration
All other terms to do with mitigation strategies to reduce atmos. carbon. Part of carbon, not water, cycle		

Case study: Tropical rainforests and water and carbon cycles *3.1.1.6* ANSWERS

Q4	**Decide which factors will lead to a net loss of forest volume on Madagascar, and what will lead to a net increase in forest volume.**

Net loss of forest volume	***Net gain of forest volume***
Gulley erosion **Commercial plantation farming** **Slash & burn** **Rise in value of Ebony**	**Carbon credit scheme** **Rise in atmospheric CO2** **Intercropping shade belts** **Environmental conservation** **Safari tourism**

Gulley erosion **Carbon credit scheme** **Commercial plantation farming**

Rise in atmospheric CO2 **Intercropping shade belts** **Slash & burn**

Environmental conservation **Rise in value of Ebony** **Safari tourism**

Q5	***Draw two flow diagrams. One to show how rising atmospheric CO2 levels can lead to rising atmospheric moisture in the hydrological cycle. One to show how deforestation can lead to an increase in atmospheric CO2. Then see if you can connect the two together. Finally, explain why deforestation initially results in a brief increase in precipitation, that quickly declines below previous levels.***