Water, carbon, climate and life on earth *3.1.1.4*

Q1	***Match the terms with their system definition***	
A	The result of an overall surplus or deficit between the magnitude of inputs compared with output.	
B	Change being introduced to a system which impacts on a change in the nature or magnitude of outputs.	
C	When an input becomes amplified by the outputs generated by a system	
D	When the system is stable with little overall change even though there may be continuous new inputs balanced by outputs.	
E	When the effect is to dampen down change introduced by inputs as the outputs impede new inputs.	
Positive feedback **Dynamism** **Negative feedback** **Equilibrium** **Net change**		

Q2	**Tick if these are primarily elements of the Water cycle, Carbon cycle – or Both**	**Water c.**	**Carbon c.**
A	Precipitation		
B	Photosynthesis		
C	Transpiration		
D	Decomposition		
E	Chemical weathering of rocks by running water		
F	Channel flow		
G	Soil storage of precipitation		

Q3	**Which of these statements accurately describes the relationship between the Water cycle and the Carbon cycle**		
		True	***False***
A	Increased precipitation results in increased biomass which outputs more carbon dioxide.		
B	More atmospheric CO2 increases global temperatures which increases evaporation generating more precipitation.		
C	Greater intensity of precipitation leads to more weathering of surface rocks which releases more carbon compounds into the sea.		
D	More CO2 in oceans from ocean-atmosphere exchange results in warmer oceans that leads to additional evaporation & more clouds		
E	Increased atmospheric CO2 fertilises growth of biomass which increases transpiration rates and encourages more precipitation.		

Q4	***How are human actions affecting the Water and Carbon cycles? List effects in one box or the other, or both.***	
A	Reducing natural vegetation to clear land for pastoral agriculture and plantation agriculture.	***Water cycle***
		Carbon cycle
B	Burning fossil fuels in increasing quantities (coal, oil and gas)	***Water cycle***
		Carbon cycle
C	Expanding urban areas and transport networks over increasing areas of the earth with more concrete and asphalt (tarmac).	***Water cycle***
		Carbon cycle

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Q5	***The implications for life on earth of changing water and carbon cycles focuses on the negative. But it is unlikely to be disadvantage for all. What may be the pros and cons for human activity of the following changes?***		
A	***Increased precipitation***	***Pros***	***Cons***
B	***Reduced precipitation***		
C	***Higher annual global temperatures***		
D	***More intense, frequent and extensive tropical storm events***		