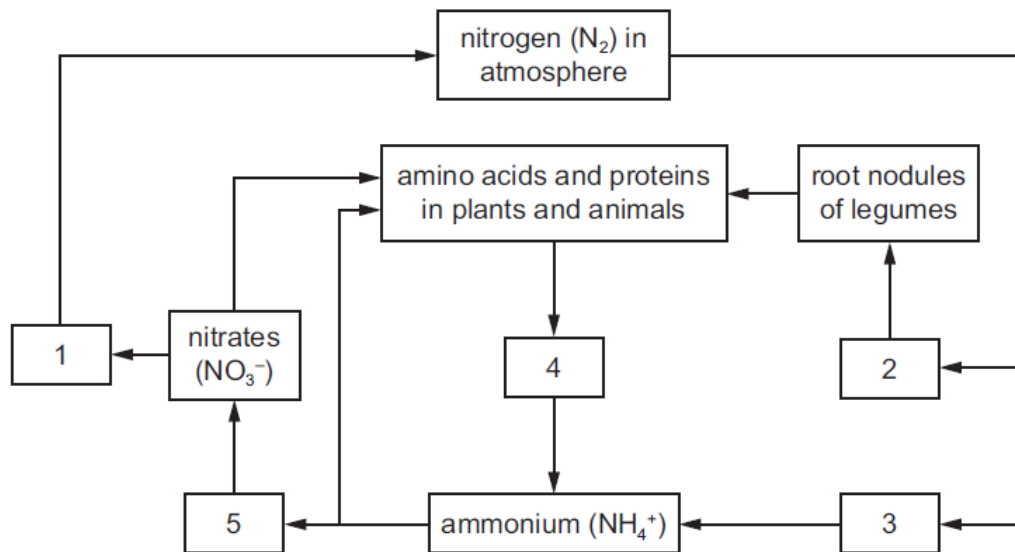


**Relationships of organisms with one another and with the environment – 2022 June O Level
5090**

1. *June/2022/Paper_11/No.30*

The diagram shows the nitrogen cycle.



In which stages of the nitrogen cycle are nitrogen-fixing bacteria important?

- A** 1 and 2 **B** 2 and 3 **C** 3 and 4 **D** 4 and 5

2. *June/2022/Paper_11/No.32*

What increases in the long term as a result of tropical deforestation?

- A** cloud cover
B humidity
C soil erosion
D soil fertility

3. June/2022/Paper_11/No.39

The number of weed plants in a grass field was counted at monthly intervals. The table shows the results.

weeds	number of plants																	
	2020									2021								
	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	
groundsel	361	382	400	490	475	400	275	120	60	0	0	5	5	4	4	2	0	
dock	688	700	720	710	730	700	700	650	200	0	0	300	150	30	14	6	2	
plantain	50	60	80	93	102	140	190	260	200	150	160	350	512	762	840	975	1090	
dandelion	75	100	160	202	253	314	335	300	175	20	0	130	414	561	732	849	987	

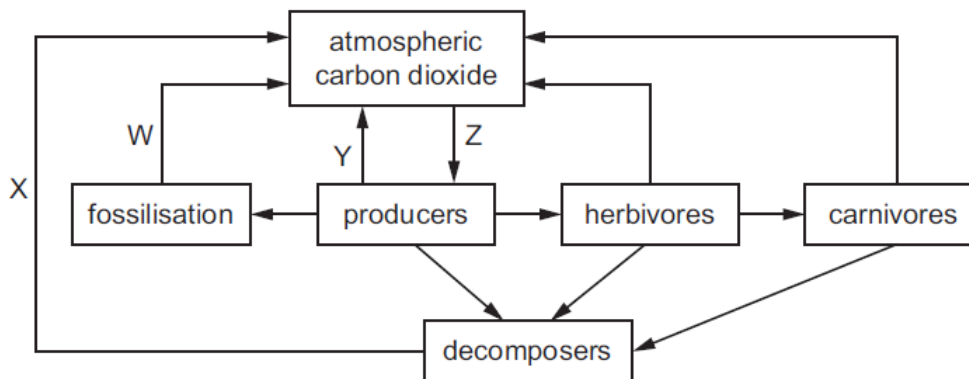
Since August 2020, the field was mown regularly and used as a football pitch.

From this information, which two weeds are best adapted to survive in mown grass?

- A dandelion and dock
- B dock and groundsel
- C plantain and dandelion
- D plantain and dock

4. June/2022/Paper_12/No.30

The diagram shows part of the carbon cycle.



Which row identifies processes W, X, Y and Z?

	W	X	Y	Z
A	combustion	respiration	respiration	photosynthesis
B	combustion	photosynthesis	photosynthesis	respiration
C	respiration	combustion	respiration	photosynthesis
D	respiration	photosynthesis	combustion	photosynthesis

5. [June/2022/Paper_12/No.32](#)

What increases in the long term as a result of tropical deforestation?

- A cloud cover
- B humidity
- C soil erosion
- D soil fertility

6. June/2022/Paper_21/No.(9a_b)

The world produces over 100 million tonnes of nitrogen-containing fertiliser annually. Farmers spread this artificial fertiliser over their soil.

(a) Describe how nitrogen from the fertiliser can pass from the soil to eventually become part of the food which humans eat.

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(b) Discuss the advantages and disadvantages of the use of artificial nitrogen-containing fertilisers.

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