



CHEMISTRY ONLINE
— **TUITION** —

Phone: +442081445350

www.chemistryonlinetuition.com

Email: asherrana@chemistryonlinetuition.com

BIOLOGY

ENERGY TRANSFERS IN & BETWEEN ORGANISMS

Level & Board	AQA (A-LEVEL)
TOPIC:	NUTRIENT CYCLES
PAPER TYPE:	QUESTION PAPER - 1
TOTAL QUESTIONS	6
TOTAL MARKS	28

ChemistryOnlineTuition Ltd reserves the right to take legal action against any individual/ company/organization involved in copyright abuse.

Nutrient Cycles - 1

1.

(a)

Explanation: Due to low respiration

Advantage: More growth occurs

(b)

Less nitrifications

So less oxidation of ammonium ions to nitrite ions and nitrate ions.

2.

(a)

Prediction: Vinegar contains no other acids.

Impact: Experimental result will be smaller than the calculated result.

(b) 12 days

3.

(a) Through extracellular digestion, saprobionts break down organic matter that contains nitrogen (e.g. urea, proteins, nucleic acids). Ammonium ions are released as a result of extracellular digestion.

(b)

Saprobionts are involved in breaking down organic compounds when plants and animals die, releasing phosphate ions into the soil for assimilation by plants.

They also release phosphate ions from urine and faeces.

4.

(a)

To allow comparisons between samples g-1

Very little ammonia in soil ug

(b) 4.5 and 4.6 $\mu\text{g g}^{-1} \text{ day}^{-1}$

(c)

B has a faster breakdown of ammonia at pH = 4.3

The A and B mixture at pH 6.9 is slowest

Suggesting that B doesn't work as well at pH 6.9

5.

(a)

Species S because change of 990,000 per gram of soil

Species T change of 9,900 per gram of soil

(b)

They didn't count bacteria

Copies of mRNA related to amount of amoA produced

Don't know how much mRNA produced by each cell

Don't know if amoA is linked to cell division

6.

(a)

Sterilize them in boiling water

To remove bacteria that might break down ammonia

I am Sorry !!!!!



DR. ASHAR RANA
M.B.B.S / MS. CHEMISTRY



- Founder & CEO of Chemistry Online Tuition Ltd.
- Completed Medicine (M.B.B.S) in 2007
- Tutoring students in UK and worldwide since 2008
- CIE & EDEXCEL Examiner since 2015
- Chemistry, Physics, Math's and Biology Tutor

CONTACT INFORMATION FOR CHEMISTRY ONLINE TUITION

- UK Contact: 02081445350
 - International Phone/WhatsApp: 00442081445350
 - Website: www.chemistryonlinetuition.com
 - Email: asherrana@chemistryonlinetuition.com
- Address: 210-Old Brompton Road, London SW5 OBS, UK