

**AQA, OCR, Edexcel**

**A Level**

# **A Level Biology**

## **Nutrient Cycles Answers**

Name:

**M**

**M**

**E**

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Total Marks: /42



<p>d)</p> <p>i) <u>A:</u></p> <ul style="list-style-type: none"><li>- Respiration occurs during day and night - producing CO<sub>2</sub></li><li>- Photosynthesis which reduces CO<sub>2</sub> only occurs during the day</li><li>- CO<sub>2</sub> levels fall during the day and increase at night</li></ul> <p><u>B:</u></p> <ul style="list-style-type: none"><li>- More light in summer</li><li>- More photosynthesis</li><li>- So CO<sub>2</sub> levels fall in the summer and rise in winter</li></ul>	<p>6 marks</p>
<p>2.</p> <p>a)</p> <p>i) To make proteins and nucleic acids/ DNA</p> <p>ii) <u>Nitrogen Fixation:</u></p> <ul style="list-style-type: none"><li>-Nitrogen gas is converted to ammonia</li><li>-Nitrogen Fixing Bacteria</li></ul> <p><u>Ammonification:</u></p> <ul style="list-style-type: none"><li>-Nitrogen compounds are turned into ammonia</li><li>-Decomposing bacteria/ saprobionts</li></ul> <p><u>Nitrification:</u></p> <ul style="list-style-type: none"><li>-ammonia is converted to Nitrites</li><li>-Nitrites to Nitrates</li><li>- Nitrifying bacteria</li></ul> <p><u>Denitrification:</u></p> <ul style="list-style-type: none"><li>- Nitrates in the soil are converted to nitrogen gas</li><li>- Denitrifying bacteria</li></ul>	<p>1 mark</p> <p>8 marks</p>

<p>ii) Nitrification</p> <p>iii) Rhizobium provides the plants with nitrogen compounds and plants provide the rhizobium with carbohydrates</p> <p>b)</p> <p>i) When excess nitrogen compounds in the soil are washed away</p> <p>ii) <u>Eutrophication</u>:</p> <ul style="list-style-type: none"><li>- Increased nitrogen compounds from leaching cause an algal bloom</li><li>- This blocks sunlight</li><li>- Plants die due to competition for light</li><li>- Bacteria feed on the dead plants</li><li>- Bacteria use oxygen for aerobic respiration</li><li>- Fish die from lack of oxygen</li></ul>	<p>1 mark</p> <p>2 marks</p> <p>1 mark</p> <p>6 marks</p>
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