Module Title: Sustainable Crop Management
Level: Five
Time Allowed: Two hours

Instructions to students:

- Enter your student number not your name on all answer books.
- Answer three out of five questions.
- All questions are equally weighted.
- Begin each answer in a separate answer book; label each answer book clearly with the number of the question you are answering.
- Neither books nor notes may be taken into the examination.

<table>
<thead>
<tr>
<th>No. of Pages</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Questions</td>
<td>5</td>
</tr>
</tbody>
</table>
Answer three out of five questions.

1. a. Explain the concept of precision farming and describe current examples in use within UK crop production. (13 Marks)
b. Discuss its potential as part of sustainable crop production systems. (12 marks)

Total: 25 marks

2. a. Describe the current use and potential for bio-fuels both in the UK and on a worldwide basis. (12 Marks)
b. Explain how the effect of developing technology and political policy in the UK may influence the production of crops for bio-fuel purposes. (7 Marks)
c. Suggest how variations in price for both world food and crude oil may influence bio-fuel developments. (6 Marks)

Total: 25 marks

3. a. Describe the current UK reliance on pesticides within conventional crop production systems. (12 Marks)
b. Explain how an integrated crop management system for crop protection could be introduced as a viable sustainable alternative. (13 Marks)

Total: 25 marks

4. a. Outline the principles of organic crop production. (13 marks)
b. Discuss the benefits and disadvantages of organic crop production within sustainable crop production systems. (12 marks)

Total 25 marks
5.  
   a. Describe the process of genetic manipulation to produce GM crops.  
      (8 Marks)
   
   b. Provide examples of GM crop technology currently practiced throughout 
      the world with specific reference to the current situation in the UK.  
      (9 Marks)
   
   c. Explain the factors that have restricted GM crop development in the UK 
      and describe the recent changes regarding EU legislation that may enable 
      approvals in the UK to be more likely.  
      (8 Marks)

   Total: 25 marks

End of Paper