



Agricultural Science Past Exam Questions

Crop Production

Higher Level

2013 – Question 1 – Part (a)

(b) List three advantages of sowing maize under plastic.

2013 – Question 3 – Option 1

(a) The common wild oat (*Avena fatua*) is described as a noxious weed.

(i) Give three reasons why this weed is considered noxious.

(ii) Name two other noxious weeds.

(b) The cultivated oat (*Avena sativa*) was once the most widely grown cereal in Ireland.

(i) Give two reasons for the decline in the cultivation of *Avena sativa*.

(ii) Give two reasons for sowing oats.

(c) (i) List three differences between complete and incomplete insect metamorphosis.

(ii) Name one insect that undergoes each type of metamorphosis.

(48 marks)

2013 – Question 8 – Part (a)

(a) Outline the strategies, other than crop rotation, employed by organic farmers and environmentally conscious growers in dealing with:

(i) weeds

(ii) invertebrate pests

(iii) fungal diseases.

2012 – Question 1 – Part (f)

(f) Explain the agricultural term tramlines and give two reasons for their use.

2012 – Question 5

(a) Give four reasons why the area under wheat cultivation is much less than the area under barley cultivation in Ireland.

(b) Give a reason for each of the following practices in potato cultivation.

(i) Sprouting.

- (ii) Burning-off the haulms.
 - (ii) Earthing-up.
 - (iv) Using certified seed.
- (c) Outline four reasons for losses occurring in potatoes during storage.

(48 marks)

2011 – Question 1 – Part (e)

- (e) Describe how a farmer provides for optimal seed germination and crop establishment.

2011 – Question 6

- (a) Describe **four** signs of ripeness in a cereal
- (b) Compare the growing of malting barley and feeding barley under the following headings:
- (i) Soil type
 - (ii) Rotation
 - (iii) Fertilizer regime
 - (iv) End use
- (c) Draw a labelled diagram to show the main structures of a cereal grain in longitudinal section.

(48 marks)

2010 – Question 1 – Part (j)

- (j) Briefly describe a symptom of attack on a crop plant by each of the following invertebrates:
- (i) Aphids
 - (ii) Flea beetles
 - (iii) Leatherjackets.

2010 – Question 3 – Option 2

- (a) Calcium is an important element in plant growth.
- (i) Outline **one** source of calcium for plants.
 - (ii) Describe **two** processes by which calcium becomes available to plants.

(b) Hoose is a parasitic disease while grass-tetany is a deficiency disease. Explain the underlined terms. In the case of **either** disease state the cause, a symptom and a method of control or treatment.

(c) Give **three** reasons for a low rate of seedling establishment in a spring-sown crop.

(48 marks)

2010 – Question 6

(a) List **four** components of a blight control programme for maincrop potatoes.

(b) Give **four** reasons why scutch grass (*Agropyron repens*) is considered by tillage farmers to be a troublesome weed.

(c) Explain the following terms:

(i) plough pan

(ii) nitrogen fixation.

(d) Describe how you would calculate the 1000 grain weight of a cereal.

(48 marks)

2009 – Question 5

(a) Describe the cultivation of spring barley or main-crop potatoes under the following headings:

(i) Soil requirements

(ii) Rotation

(iii) Weed control

(iv) Yield (tonnes per hectare).

(b) (i) Explain the following terms as they apply to artificial fertilisers:

Placement

Broadcasting

Top-dressing.

(ii) Suggest a crop situation in which one of the above methods is used.

(c) Consumer demand in Ireland is for floury (high dry-matter) potatoes.

(i) Suggest a suitable compound fertiliser for the production of floury tubers.

(ii) Give three causes of low dry matter in potato tubers.

(48 marks)

2008 – Question 1 – Part (c)

(c) Explain why the growing of seed potatoes is situated predominantly in county Donegal.

2008 – Question 3 – Option 1

(a) (i) List **three** advantages of crop rotation.

(ii) Name **two** crops that can be grown as a suitable root break in a cereal rotation.

(iii) State any one use for **one** of the crops you have mentioned.

(b) List **four** factors that are considered by the Department of Agriculture, Fisheries and Food when recommending varieties of cereals to be grown by farmers.

(c) Identify the type of organism which causes each of the following diseases and explain how each disease could be controlled or prevented;

(i) club root in turnips,

(ii) leaf roll in potatoes,

(iii) loose smut in barley,

(iv) common scab in potatoes.

(48 marks)

2008 – Question 8 – Part (a)

(a) A farmer has recently purchased a farm and intends to grow tillage crops on it.

(i) Outline **four** soil characteristics which would determine the suitability of the soil for tillage.

(ii) With reference to **one** of the soil characteristics you have mentioned in (i), describe;

1. how it might be measured,

2. how it might influence the growth of a named tillage crop.

2007 – Question 1 – Part (b)

(b) Mention **three** features that distinguish the production of malting barley from feeding barley.

2007 – Question 1 – Part (i)

(i) List **three** characteristics of a loam soil that would make it suitable for tillage.

2007 – Question 3 – Option 2

(a) In relation to a **named** root crop, describe the approaches a farmer might take to control weeds effectively.

(b) (i) Describe the physiological changes occurring in a barley plant during the ripening process.

(ii) Mention **two** tests a merchant might carry out when purchasing grain from a farmer.

(c) Describe the production of a **named** catch crop on a tillage farm.

(48 marks)

2006 – Question 1 – Part (h)

(h) Give an example of one plant from each of the following families:

(i) Cruciferae

(ii) Leguminosae

(iii) Compositae

(iv) Umbelliferae.

2006 – Question 3 – Part (a) – Option 2

(a) (i) Name **two** viral diseases of potatoes.

(ii) In the case of **one** disease state how it is spread.

(iii) Mention one method used to prevent the spread of this disease.

(iv) Give two examples that show the beneficial effects of bacteria in farming.

2006 – Question 3 – Part (b) – Option 2

(b) Describe the life cycle of a **named** parasitic fungus, which causes a disease in a crop, under the following headings:

(i) Mode of reproduction.

(ii) Mode of nutrition.

(iii) Environmental conditions that favour the spread of the disease.

2006 – Question 5

(a) Explain why the botanical composition of a permanent ley differs from that of a temporary ley.

(b) Discuss two advantages of including grass as a crop in an arable crop rotation.

(c) Give three reasons for the inclusion of cereals as a supplementary food for farm animals.

(d) In relation to fodder crops, other than grass:

(i) State three advantages of growing fodder crops.

(ii) Describe two methods used in feeding these crops to animals.

(48 marks)

2006 – Question 8 – Part (c)

(c) (i) Explain why a good seed bed is essential for successful crop production.

(ii) Outline the importance of soil moisture in the development of a seedling of a crop.

(iii) Explain why farm implements called rollers are used during the cultivations of a named cereal crop as follows:

1. Preparation of soil for sowing,

2. After sowing the seed.