



Question Paper

Module 2:	Wheat and the Screenroom	
Date: 8 May 2013	Time: 09:30 – 11:30	Duration: 2 hours

You should have the following for this examination: **one answer book; pencil, pen and ruler.**

All questions carry equal marks. The maximum marks for each section within a question are shown. Answer **ALL EIGHT** questions, starting each new question (1-8) on a **new** page of the answer book.

1.
 - a) Sketch a diagram of a wheat floret showing both sets of reproductive structures. (5 marks)
 - b) Describe briefly the pollination and fertilisation of a wheat plant. (5 marks)
 - c) List **FOUR** factors that affect the growth of the wheat plant. (2 marks)

2.
 - a) Describe briefly the following fungal diseases of wheat in the field:
 - i) Deoxynivalenol (DON); (3 marks)
 - ii) Zearalenone (ZON). (3 marks)
 - b)
 - i) Describe briefly the fungal disease Ochratoxin (OTA). (4 marks)
 - ii) State the main influence on the level of OTA in grain. (1 mark)
 - iii) State why there has been an overall reduction in the level of OTA in wheat. (1 mark)

3.
 - a) Describe briefly the weighing procedures that should be undertaken by the weighbridge operator. (7 marks)
 - b) Define the following:
 - i) Tare weight; (1 mark)
 - ii) Gross weight; (1 mark)
 - iii) Nett weight. (1 mark)
 - c) State **TWO** actions which a weighbridge operator does **NOT** have the authority to carry out if a vehicle is found to be overloaded. (2 marks)

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4. a) List the **THREE** key reasons for the sampling and testing of wheat at intake. (3 marks)
- b) Name and describe briefly **THREE** quality assurance schemes currently operated in the UK by the Agricultural Industries Confederation (AIC). (6 marks)
- c) Describe briefly the information which the wheat “passport” should provide to the miller. (3 marks)
5. a) State the purpose of the ultra-cylinder. (2 marks)
- b) With the aid of diagrams, describe the method of operation of the ultra-cylinder, including separations made. (10 marks)
6. a) With the aid of a sketch, show the **FOUR** main parts of a Buhler optical colour sorter. (4 marks)
- b) Describe briefly the **FOUR** main working principles of the Buhler optical colour sorter. (6 marks)
- c) List **FOUR** factors that should be taken into account when deciding on the required capacity of a colour sorter. (2 marks)
7. a) Sketch both cross and longitudinal sections for **EACH** of the **THREE** types of conditioning bin outlet. (9 marks)
- b) For **EACH** of the three conditioning bin outlets, state **ONE** advantage and **ONE** disadvantage. (3 marks)
8. a) State the maximum safe level of moisture content of wheat for prolonged storage in the UK. (1 mark)
- b) Describe briefly how the miller can detect overheated wheat. (2 marks)
- c) Describe briefly the process of wheat drying. (4 marks)
- b) Describe briefly **FIVE** ways to avoid over-drying wheat. (5 marks)