



Question Paper

Module 2:	Wheat and the Screenroom	
Date: 4 May 2016	Time: 09:30 – 11:30	Duration: 2 hours

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

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) Describe briefly the **SIX** stages of the growth and development of the wheat plant. (7 marks)
 - b) State which part of the wheatgerm contains the elements of a young plant. (1 mark)
 - c) List **FOUR** factors that could affect the development of the wheat plant. (4 marks)
2.
 - a) Explain the differences between the following:-
 - i) winter and spring wheat; (3 marks)
 - ii) hard and soft wheat; (3 marks)
 - iii) strong and weak wheat. (3 marks)
 - b) Give another name for the disease 'stinking smut'. (1 mark)
 - c) State which fungal disease causes bleaching of the spikelet. (1 mark)
 - d) List the **TWO** factors that determine the relative strength of wheat. (1 mark)
3.
 - a) Describe the operation of a Probaload sample station. (6 marks)
 - b) Sketch the recommended sampling points for:
 - i) A grain lorry weighing up to 15 tonnes; (1 mark)
 - ii) A grain lorry weighing between 15 and 30 tonnes; (1 mark)
 - iii) A grain lorry weighing between 30 and 50 tonnes. (1 mark)
 - c) State the reasons why wheat is "preliminary cleaned" on intake. (3 marks)
4.
 - a) With the aid of a labelled sketch, describe briefly the main parts and working principles of the Buhler optical colour sorter. (8 marks)
 - b) List **FOUR** considerations when deciding on the capacity required of a colour sorter. (4 marks)

continued overleaf

5. a) Define the following terms:
- i) Tare weight; (1 mark)
 - ii) Gross weight; (1 mark)
 - iii) Nett weight. (1 mark)
- b) Describe briefly the weighing procedures that should be undertaken by the weighbridge operator. (7 marks)
- 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)
6. Sketch and label a simple dry screenroom flow that uses all FIVE principles of separation, indicating in the flow where EACH is used. (12 marks)
7. a) State FOUR factors that affect the amount of water addition and conditioning time given to wheat. (4 marks)
- b) State the TWO main methods of adding water to wheat to achieve optimum conditioning. (2 marks)
- c) Explain why and how a mill would dampen wheat immediately before 1st break. (5 marks)
- d) State where in a flour mill you would find a Chinaman's hat. (1 mark)
8. a) List SIX screenroom practices that will help to minimise bacteria levels. (6 marks)
- b) Calculate the expected flour moisture which would result from milling the following grist:
- 30% CWRS at 16.50% moisture
 - 35% Australian at 15.75% moisture
 - 25% English at 15.50% moisture
 - 10% French at 15% moisture
- Assume moisture loss on milling to be 1.5%.
Show all workings to 2 decimal places. (4 marks)
- c) State the purpose of a FIFO bin discharge system. (2 marks)