Question Paper

Module 2:	Wheat and the Screenroom	
Date:	Time:	Duration:
8 May 2019	**09:30 – 11:30**	**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) Draw a longitudinal section of a wheat grain, showing all the bran layers. (6 marks)

b) Describe briefly the function of the pericarp. (2 marks)

c) Describe briefly the testa. (2 marks)

d) State the maximum level of ergot contamination allowed in feed wheat. (1 mark)

e) Give another name for the disease "stinking smut". (1 mark)

2. a) List and describe briefly the FIVE common milling classes of wheats traded from the USA. (5 marks)

b) Name the Australian state that contains the country's major wheat production area. (1 mark)

c) Name the Australian wheat variety most suited to the production of instant and fresh noodles. (1 mark)

d) State the tonnage of wheat that Germany typically exports. (1 mark)

e) Describe the four main German wheat categories. (4 marks)

3. a) Describe briefly the weighing procedures that should be undertaken by the weighbridge operator. (5 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)

d) List the information, other than weight, that should be recorded on a weighbridge ticket. (2 marks)

continued overleaf

4. a) With the aid of a sketch, describe the operation of a probaload sample station. (6 marks)

b) Sketch the recommended sampling points for:

i) a grain lorry up to 15 tonnes; (1 mark)

ii) a grain lorry between 15 and 30 tonnes; (1 mark)

iii) a grain lorry between 30 and 50 tonnes. (1 mark)

c) Describe briefly the process for "rejections and non-conformances" set out in the nabim code of practice for wheat intake. (3 marks)

5. a) Describe briefly how a de-stoner works. (4 marks)

b) In tabular form, describe how the SGA Gravity Selector and SGA De-stoner are different in design and operation. (6 marks)

c) Describe briefly the information that 'throw indicator discs' provide for the operation of the machine. (2 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. (4 marks)

c) List the factors to be considered when deciding on the required capacity of a colour sorter. (4 marks)

7. 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:

20% CWRS at 16.75% moisture; 10% Australian at 16.50% moisture

50% English at 15.50% moisture; 20% French at 15.25% moisture

Assume moisture loss on milling to be 1.6%.
Show all workings to 2 decimal places. (4 marks)

c) i) State the maximum moisture addition that can be added to the wheat at pre-1st break damping. (1 mark)

ii) State when pre-1st break damping is particularly important. (1 mark)

8. a) With the aid of sketches, describe THREE bin outlet configurations designed to give FIFO operation. (6 marks)

b) State the maximum safe level of moisture content of wheat for prolonged storage in the UK. (1 mark)

c) Define the term "wheat drying". (2 marks)

d) State the maximum safe temperature for drying wheat. (1 mark)

e) Explain how overheated wheat can be detected by the miller. (2 marks)