



UK FLOUR
MILLERS

Question Paper

Module 2:	Wheat and the Screenroom	
Date: 4 May 2022	Time: 09:30 – 11:30	Duration: 2 hours

You should have the following for this examination: **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) Draw a longitudinal section of a wheat grain, showing all the bran layers. (8 marks)
 - b) Tabulate the components of the wheat grain, stating the percentage of total grain weight for each component. (4 marks)

2.
 - a) List FOUR groups of wheat grown in Germany, and state the type of flour for which each could be used. (6 marks)
 - b) Name the categories of wheat which UK Flour Millers (nabim) classifies, and state the purpose for which each class is used. (4 marks)
 - c) List TWO insect pests that could affect wheat in the field. (2 marks)

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) List SIX advantages that steel storage bins have over those made of concrete. (6 marks)
 - b) Describe briefly the process for 'rejections and non-conformances', as set out in the UK Flour Millers code of practice for wheat intake. (6 marks)

- 5** Outline the purpose of EACH of the following screenroom machines:
- a) Wheat measurer;** (3 marks)
 - b) Optical colour sorter;** (2 marks)
 - c) Milling separator;** (3 marks)
 - d) Specific gravity table;** (2 marks)
 - e) Dry destoner.** (2 marks)
- 6. a) List the factors to be considered by a milling engineer when designing wheat spouting.** (5 marks)
- b) With the aid of a sketch, describe the simplest safeguard against the wearing action of wheat on the spouts where the direction of the flow changes.** (6 marks)
- c) State the minimum angle of a metal spout to allow a consistent flow of wheat.** (1 mark)
- 7. With the aid of a simple sketch, describe the operation of a Buhler Flow Balancer, used to control the rate of feed of wheat.** (12 marks)
- 8. a) Sketch THREE bin outlet configurations designed to give a FIFO operation.** (6 marks)
- b) List SIX screenroom practices that will help to minimise bacteria levels.** (6 marks)