



Question Paper

Module 5:	Flour	
Date: 9 May 2017	Time: 09:30 – 12:00	Duration: 2½ 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 SEVEN** questions, starting each new question (1-7) on a **new** page of the answer book.

1.
 - a) State the UK nutrient levels required for calcium carbonate in white flour. (1 mark)
 - b) Explain why flour stream analysis is undertaken. (6 marks)
 - c) State what a miller should consider when setting a target range for a customer specification. (5 marks)

2.
 - a) State TWO consequences of incorrect sampling. (1 mark)
 - b) Describe briefly the factors that should be considered for an on-site laboratory testing regime. (5 marks)
 - c) State the sugar content of flour. (1 mark)
 - d) State the optimum and acceptable range of moisture levels for the storage of flour and what conditions need to be considered during storage. (2 marks)
 - e) Describe the use and purpose of emulsifiers when used as an ingredient in breadmaking. (3 marks)

3.
 - a) State what is meant by the term “mycotoxin”. (2 marks)
 - b) State why mycotoxins are significant and what factors can affect mycotoxin levels in wheat. (4 marks)
 - c) Describe how on-line protein measurement is carried out and how it is beneficial to the miller. (5 marks)
 - d) State what is measured by a flow cup. (1 mark)

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4. a) State the TWO main factors that affect the protein content of wheat. (2 marks)
- b) Describe how the glutomatic test is carried out and the measurements made. (6 marks)
- c) State the typical ash content for the following flours (without added calcium):
- i) Biscuit flour;
 - ii) Breadmaking flour;
 - iii) Patent flour;
 - iv) Wholemeal flour. (2 marks)
- d) State TWO factors that can affect the mineral matter in flour. (2 marks)
5. Explain how a combination of a Farinograph and Extensograph can be used to analyse the rheological properties of a bread flour. (12 marks)
6. a) State why dough temperatures in the breadmaking process must be controlled. (2 marks)
- b) Describe what causes temperature changes in bread doughs and how bakeries control the changes in dough temperatures. (2 marks)
- c) State the uses and effects of fat in the breadmaking process. (2 marks)
- d) Describe what occurs in the oven within the baking process after final proof. (5 marks)
- e) State the effect of too much divider oil on a loaf of bread. (1 mark)
7. a) State how self-raising flour is typically produced. (2 marks)
- b) State the uses of Sodium Metabisulphite (SMS). (2 marks)
- c) List the ingredients and amounts as a percentage (%) of flour weight of a fruited high-ratio cake. (4 marks)
- d) Describe briefly FOUR faults that can cause quality issues in puff pastry. (4 marks)