



## Question Paper

<b>Module 5:</b>	<b>Flour</b>	
Date: <b>14 May 2013</b>	Time: <b>09:30 – 12:00</b>	Duration: <b>2½ hours</b>

You should have the following for this examination: **one answer book; pencil, pen, calculator 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) Define briefly the following types of flour and give typical extraction rates for EACH type.
  - i) White flour;
  - ii) Brown flour;
  - iii) Wholemeal flour. (6 marks)
- b) List the steps that need to be taken to calculate a cumulative ash curve. (6 marks)
2. a) Describe how quality assurance differs from quality control. (3 marks)
- b) Within a normal distribution curve, what is the percentage (%) of results you would expect to be within:
  - i) ONE standard deviation;
  - ii) TWO standard deviations;
  - iii) THREE standard deviations. (3 marks)
- c) Describe briefly what a specific weight test measures. (2 marks)
- d) List the factors that can affect the specific weight of wheat. (4 marks)
3. a) Describe briefly the purpose and operation of the Brookfield viscometer. (3 marks)
- b) Explain briefly why laboratory test milling is carried out. (3 marks)
- c) Explain why damaged starch is important in breadmaking. (2 marks)
- d) Describe how starch is damaged. (4 marks)
4. a) Draw a typical Farinogram and label the FIVE main measurements taken. (7 marks)
- b) Describe briefly EACH of the labelled measurements. (5 marks)

*continued overleaf*

5. a) Describe why a Liquefaction Number (LN) is used to calculate the Falling Number (FN) of a grist. (3 marks)

b) Using the formula: 
$$LN = \frac{6000}{FN-50}$$

calculate the falling number of the following grist. (6 marks)

Wheat	Percent (%) of grist	Hagberg Falling Number
Type 1	40	300
Type 2	60	220

c) Give a typical Hagberg Falling Number to indicate the following in UK wheat:

- i) High level of alpha amylase activity
- ii) Moderate level of alpha amylase activity;
- iii) Low level of alpha amylase activity. (3 marks)

6. a) List the characteristics that are needed for a breadmaking flour, regardless of the baking process being used. (5 marks)

b) List the forms of yeast used in the breadmaking process and give a brief description of EACH form. (3 marks)

c) List FOUR faults in the baking process which might adversely affect loaf volume. (4 marks)

7. a) Describe the particle size in a high ratio cake flour. (1 mark)

b) List the FOUR stages of heat treatment for cake flours, giving a brief description of EACH stage. (6 marks)

c) Describe why it is important that wafer flour does not develop gluten in the mixed batter. (5 marks)