



UK FLOUR  
MILLERS

## Question Paper

<b>Module 3:</b>	<b>Mill Processes and Performance</b>	
Date: <b>6 May 2021</b>	Time: <b>09:30 – 12:30</b>	Duration: <b>3 hours</b>

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 TEN** questions, starting each question (1-10) on a **new** page of the answer book.

1.
  - a) **Outline FOUR pieces of special purpose equipment not found in a standard mill flow.** (8 marks)
  - b) **State the THREE main objectives of the reduction sifters.** (3 marks)
  - c) **State the units in which roll surface is calculated.** (1 mark)
  
2.
  - a) **Sketch and label a flow diagram of a typical 5 break system.** (10 marks)
  - b) **Explain the main purpose of the scratch system.** (2 marks)
  
3.
  - a) **List SIX roller mill details that should be included in a mill flow sheet.** (6 marks)
  - b) **Describe SIX effects that moisture has on mill performance.** (6 marks)
  
4.
  - a) **Explain the process of stratification within a purifier.** (6 marks)
  - b) **State the SIX layers of product achieved by stratification in a purifier.** (6 marks)
  
5. **Describe SIX advantages square-sieve plansifters have over the original free-swinging plansifter.** (12 marks)

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6. a) List the SIX steps to be taken to adjust the aspiration on a Buhler MQRF Puromat purifier to obtain optimum performance. (6 marks)
- b) Describe TWO methods used for automatic feed roll adjustment. (4 marks)
- c) Explain how roll gap adjustment improves mill performance. (2 marks)
7. a) List THREE vitamins found in wheatgerm. (3 marks)
- b) Sketch and label a 1 tonne wholemeal plant, including stones. (9 marks)
8. Explain the following terms:
- a) Conveying speed; (3 marks)
- b) Phase density; (3 marks)
- c) Negative pressure; (3 marks)
- d) Positive pressure. (3 marks)
9. For EACH of the following, list THREE operational factors that must be checked to maintain good mill balance:
- a) Break rolls; (3 marks)
- b) Purifiers; (3 marks)
- c) Sifters; (3 marks)
- d) Feed to the mill. (3 marks)
10. a) List SIX daily records that should be kept to monitor mill performance. (6 marks)
- b) List SIX losses in solids which contribute to invisible loss. (6 marks)