



Question Paper

Module 3:	Mill Processes and Performance	
Date: 4 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 TEN** questions, starting each question (1-10) on a new page of the answer book.

1.
 - a) Explain why purifiers are used in the milling process. (5 marks)
 - b) Describe the main purpose of de-branning. (3 marks)
 - c) Explain the main purpose of the scratch system. (4 marks)
2.
 - a) Explain the main objectives of the following:
 - i) 1st, 2nd and 3rd Breaks; (3 marks)
 - ii) 4th and 5th Breaks; (3 marks)
 - iii) Bran Finishers. (3 marks)
 - b) State what factors would need to be considered when designing the length of the break system. (3 marks)
3.
 - a) Explain the main purpose of the reduction system. (5 marks)
 - b) State SEVEN factors that have enabled shorter systems to be developed. (7 marks)
4.
 - a) Complete the stock destinations on the attached flow sheet for a typical purification system. (6 marks)
 - b) Describe in detail how broad bran is produced. (5 marks)
 - c) State why it is beneficial to the miller to produce broad bran. (1 mark)
5.
 - a) Explain the term “stratification” when applied to a purifier. (6 marks)
 - b) Describe briefly the terms:
 - i) Conveying speed; (2 marks)
 - ii) Phase density; (2 marks)
 - iii) Blowline venting. (2 marks)

continued overleaf

6. a) State THREE types of front feed rolls used on rollermills and on which passage EACH would be used. (6 marks)
- b) With the aid of diagrams, describe the following:
- i) Taper; (3 marks)
- ii) Camber. (3 marks)
7. a) With the aid of a sketch, describe how product safety is maintained between the end of the mill and bulk outload. (6 marks)
- b) i) Describe ONE method of producing wholemeal flours. (3 marks)
- ii) List THREE other methods of producing wholemeal flours. (3 marks)
8. a) State SIX records that should be kept to monitor mill performance. (6 marks)
- b) Describe briefly how the following affect mill performance:
- i) Gristing; (3 marks)
- ii) Extraction. (3 marks)
9. Describe briefly what daily and weekly checks should be carried out on the following to ensure maximum equipment efficiency:
- a) Rollermills; (6 marks)
- b) Purifiers. (6 marks)
10. List TWELVE effects on mill balance of the inefficient operation of coarse semolina purifiers due to blinded covers and/or excessive use of air. (12 marks)

Answer Sheet

Module 3: Mill Processes and Performance

Q4a Write your answers clearly on the diagram below. Make sure that the invigilator attaches this sheet to your script at the end of the examination.



