



Question Paper

Module 3:	Mill Processes and Performance	
Date: 8 May 2014	Time: 09:30 – 12.00	Duration: 2½ hours

You should have the following for this examination: **one answer book; calculator, 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) State **TWO** reasons why reels were unsuitable for classifying stocks. (2 marks)
 - b) List **FOUR** items of ancillary plant that were introduced during the nineteenth century to increase milling capacity. (4 marks)
 - c) List **FOUR** advantages of water cooling in roller mills. (4 marks)
 - d) List **TWO** disadvantages of water cooling in roller mills. (2 marks)

2. Mark on the attached flow sheet the stock destinations for each of the passages shown. (12 marks)

3. Calculate the total release of a **FIVE** Break milling system from the following releases. *(The IV Break passage is split 50% coarse and 50% fine.)*
(The answer should show the release of EACH passage correct to ONE decimal place and be laid out in the form of a table.)

I Break	35%
II Break	60%
III Break	30%
IV Break Coarse	15%
IV Break Fine	5%

(12 marks)

4.
 - a) Explain briefly the purpose of the land in a break roll flute. (3 marks)
 - b) State the **THREE** main functions of plansifters in the reduction system. (3 marks)
 - c) Explain briefly the difference between the two co-products: bran and wheatfeed. (3 marks)
 - d) Describe briefly the term 'Collins Cut', stating where it would be found in the milling process. (3 marks)

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5. a) State **FOUR** reasons for installing computerised roll gap adjustment. (4 marks)
b) List the **FOUR** advantages of Nova sieve frames. (4 marks)
c) State **FOUR** advantages a drawer type plansifter has over a square sieve plansifter. (4 marks)
6. a) List the **SIX** layers of stock created during the process of purification. (6 marks)
b) State the **TWO** types of positive displacement blower. (2 marks)
c) For **EACH** type of positive displacement blower, describe briefly the type of conveying system for which they are used. (4 marks)
7. a) In a three conveyor system, list the **INDIVIDUAL** flour passages that would feed into each collecting conveyor. (*Assume the mill has five breaks and the reduction system extends to K or C11.*) (9 marks)
b) State the percentage of flour that would be expected in **EACH** collecting conveyor. (3 marks)
8. a) Describe briefly **SIX** adjustments which need to be made to the milling process when changing from a hard grist to a soft grist. (9 marks)
b) State **THREE** objectives that a miller will have when changing from a hard grist to a soft grist. (3 marks)
9. Explain the **THREE** methods a miller might use to calculate extraction. (*NB: No marks will be given for formulae alone.*) (12 marks)
10. a) In a typical mill, list **EIGHT** actions that should be taken in order to increase a flour's protein. (8 marks)
b) Explain the term 'Mill Performance'. (4 marks)

Question 2 Answer Sheet

Module 3: Mill Processes and Performance

Q2. Mark on the flow sheet the stock destinations for each of the passages shown.

