



## Draft Question Paper

<b>Module 2:</b>	<b>Wheat and the Screenroom</b>	
Date: <b>7 May 2014</b>	Time: <b>09:30 – 11:30</b>	Duration: <b>2 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 EIGHT** questions, starting each new question (1-8) on a **new** page of the answer book.

1.
  - a) Sketch and label a germinating wheat seed. (5 marks)
  - b) Describe the germination of wheat. (5 marks)
  - c) State the minimum temperature required for a wheat plant to germinate. (1 mark)
  - d) Name the part of the wheat plant that contains the elements of the young plant. (1 mark)
  
2.
  - a) Describe the climatic conditions suitable for the growth of the wheat plant.(5 marks)
  - b) List the THREE essential minerals that soil should contain for the growth and development of the wheat plant. (3 marks)
  - c) Describe briefly the following insect pests of wheat and the damage they cause to the wheat plant:
    - i) Wheat bulb fly; (2 marks)
    - ii) Leatherjackets. (2 marks)
  
3.
  - a) Sketch and label the main parts of a Probaload sample station. (6 marks)
  - b) Describe the operation of a Probaload sample station. (6 marks)
  
4.
  - a) List TEN tests that should be carried out on a load of wheat in accordance with the nabim code of practice. (5 marks)
  - b)
    - i) Describe what is meant by the term 'grain heating'. (1 mark)
    - ii) Describe how to detect grain heating. (2 marks)
  - c) Describe briefly how to control dry grain heating. (2 marks)
  - d) Describe briefly how to control damp grain heating. (2 marks)

*continued overleaf*

5. a) Sketch and label a diagram of a Satake SGA Destoner. (6 marks)
- b) Describe the method of operation of the Satake SGA Destoner. (6 marks)
6. a) With the aid of a labelled sketch, explain what a manometer reading measures and how it indicates whether a dust collector is operating normally. (8 marks)
- b) List the checks that should be made to ensure that dust collectors are working efficiently. (4 marks)
7. a) Describe briefly the factors that should be considered when deciding the level of moisture to be added and the conditioning time for wheat. (4 marks)
- b) i) List the TWO main methods of adding water to wheat to achieve optimum conditioning. (3 marks)
- ii) From the above two methods, state which would normally be found in a modern flour mill and state the reasons for your choice. (3 marks)
- c) State the installation angle of a grain tempering mixer. (1 mark)
- d) State the normal running speed of a Buhler Intensive Dampener. (1 mark)
8. a) State the principle on which a gravimetric feeder is based. (1 mark)
- b) i) With the aid of a sketch, describe the method of operation of an SLS Gravimetric feeder. (9 marks)
- ii) State TWO characteristics of the supply rate required by this feeder. (2 marks)