

**W1-2-60-1-6**

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

# **UNIVERSITY EXAMINATIONS 2018/2019**

THIRD YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN AND TECHNOLOGY NUTRITION

**AFS 2308: PRINCIPLES OF CEREAL SCIENCE**

DATE: APRIL 2019 TIME: 2 HOURS

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**INSTRUCTIONS:**

**ANSWER ALL QUESTIONS IN SECTION A [30 MARKS] AND ANY TWO QUESTIONS IN SECTION B [40 MARKS]**

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**SECTION A**

1. Discuss the differences between the classes of rice Oryza sativa indica and Oryza sativa japonica. [6 marks]
2. Discuss the principal utilitarian classes of maize [6 marks]
3. Differentiate between hard and soft wheats in terms of their structure and milling characteristics [6 marks]
4. Distinguish between the terms “cleaning” and “separation” as applied to pre-processing of cereal grains including the classes of frequently encountered screenings. [6 marks]
5. Define end of the following terms as they apply to wheat milling operations. (a) break stock (b) scalping (c ) purifying [6 marks]

**SECTION B**

1. Discuss all the stages involved in the production of white flour from wheat. [20 marks]
2. Describe the stages involved in the manufacture of rolled oats using the modern (green shelling) system. [20 marks]
3. Describe the operations involved in the commercial extraction of starch from maize (corn) grain. [20 marks]