



UNIVERSITY
OF
JOHANNESBURG

FACULTY OF SCIENCE

DEPARTMENT OF BIOTECHNOLOGY & FOOD TECHNOLOGY
BACCALAUREUS TECHNOLOGIAE: FOOD TECHNOLOGY

MODULE FTN1BM4
FOOD MICROBIAL ASSURANCE 4
CAMPUS DFC

DECEMBER EXAMINATION

DATE: 00/12/2015

SESSION: 00:00 – 00:00

ASSESSOR

MS DJA METCALFE

INTERNAL MODERATOR

DR B DLAMINI

EXTERNAL MODERATOR

PROF EM BUYS

DURATION

HOURS

MARKS

168

100% 165

NUMBER OF PAGES:

5 PAGES INCLUDING 1 ANNEXURE.

INSTRUCTIONS: HAND IN THE EXAMINATION PAPER TOGETHER WITH THE EXAMINATION BOOK.

REQUIREMENTS:

ONE (1) EXAMINATION ANSWER BOOKLET PER STUDENT.

INSTRUCTIONS TO CANDIDATES:

1. Answer all the questions in the examination book provided. Questions may be answered in any order, but subsections of questions must be answered together.
 2. Number your answers clearly and correctly.
 3. Marks will be deducted for untidy and illegible handwriting.
 4. Good luck!
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A meat abattoir produces a wide variety of fresh processed meat products which the FAO defines (Heinz & Hautzinger, 2010) as:

“These products are meat mixes composed of comminuted **muscle meat** (Fig. 125, 126, 127), with varying quantities of **animal fat**. Products are **salted only**, curing is not practiced. **Non-meat ingredients** are added in smaller quantities for improvement of flavour and binding, in low-cost versions larger quantities are added for volume extension. All meat and non-meat ingredients are added **fresh** (raw). Heat treatment (**frying, cooking**) is applied immediately prior to consumption to make the products palatable. If the fresh meat mixes are filled in casings, they are defined as **sausages** (e.g. frying sausages). If other portioning is customary, the products are known as **patties, kebab**, etc.”

The company has made use of available Codex standards, guidelines and codes of practice to develop and implement prerequisite programmes (PRPs) and is in the process of selecting a Global Food Safety Initiative (GFSI) recognised food safety management system (FSMS) for implementation and certification.

Heinz, G. and Hautzinger, P. (2010). *Meat processing technology for small-to medium-scale producers*. Food and Agriculture Organization (FAO) of the United Nations. Rap Publication: 2007/20. ISBN: 978-974-7946-99-4. Available from: <http://www.fao.org/docrep/010/ai407e/ai407e09.htm>

QUESTION 1

- 1.1 Describe and differentiate between the following:
 - 1.1.1 Codex Alimentarius standards, guidelines and codes of practice (10)
 - 1.1.2 GFSI recognised schemes (6)
 - 1.1.3 FAO publications (2)
 - 1.2. The British Retailer Consortium (BRC) Global Standard for Food Safety is a GFSI recognised scheme which is considered for implementation. Write notes on and describe the benefits to the company of implementation and certification against this food safety management system. (12)
- [30]**
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QUESTION 2 OVER THE PAGE

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QUESTION 2

A decision is made to first implement and obtain certification against SANS/ISO 22000:2005 followed by the implementation and certification against FSSC 22000 at a future date rather than the BRC Global Standard for Food Safety.

- 2.1 Differentiate between SANS/ISO 22000:2005 and FSSC 22000 and motivate for the implementing ISO 22000:2005 despite the fact that it is not a GFSI recognised scheme. (10)
- 2.2 In order to meet the requirements of SANS/ISO 22000:2005, section 5 **management responsibility** must be demonstrated. Describe what is required from management using practical examples to demonstrate your understanding of management responsibility. (15)
- 2.3 Describe **management review** and suggest the types of evidence that you would use as input to a management review to meet the requirements of SANS/ISO 22000:2005, section 5.8. (10)
- 2.4 Describe the requirements for **prerequisite programmes** (PRPs) as required by SAN/ISO 22000:2005, section 7.2. (10)
- 2.5 Evaluate and comment on the **flow diagram** provide in annexure 1 against the requirements as outlined in 7.3.5.1 of SAN/ISO 22000:2005. (10)
- 2.6 SANS/ISO 22000:2005, section 7.4.3 deals with **hazard assessment** and requires that the methodology used is described. Elaborate on this requirement and suggest appropriate methodologies. (15)
- 2.7 After microbial analysis a batch of hamburger patties is found not to meet the end product microbial specifications. Summarise the requirements of SANS/ISO 22000:2005 section 7.10.3.3 in this regard and provide practical examples of how **disposition of the nonconforming product** could be achieved to meet the requirements. (10)
- 2.8 Some of the nonconforming hamburger patties have already been distributed for sale and requires **product withdrawal**. Describe the requirements of SAN/ISO 22000:2005 section 7.10.4 in this regard and provide practical examples of how you would meet the requirements. (10)
- 2.9 One of the requirements for verification of SANS/ISO 22000:2005 is the use of **internal audits** (8.4.1). Differentiate between external and internal audits and describe, providing example/s and a procedure to demonstrate how you will meet the requirement to conduct internal audits. (15)
- 2.10 The existing Hazard Analysis Critical Control Point (HACCP) plans were developed using the guidelines contained in the CAC/RCP 1-1969. Describe the major differences you expect to find between the process that was followed for CAC/RCP 1-1969 and the requirements of SANS/ISO 22000:2005, Section 7. (8)

[113]

QUESTION 3 OVER THE PAGE

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QUESTION 3

Product traceability is important in the recall process. There is currently no traceability PRP in place and this must be developed and implemented as one of the requirements of ISO 22000:2005.

- 3.1 Describe product traceability including internal and chain traceability and its role in food safety and quality management systems. (15)
- 3.2 Describe the specific requirements of ISO 22000:2005 clause 7.9 with regard to the traceability system providing practical examples of how you would demonstrate compliance. (10)
- [25]**
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FULL MARKS: 168
100%: 165

Annexure 1

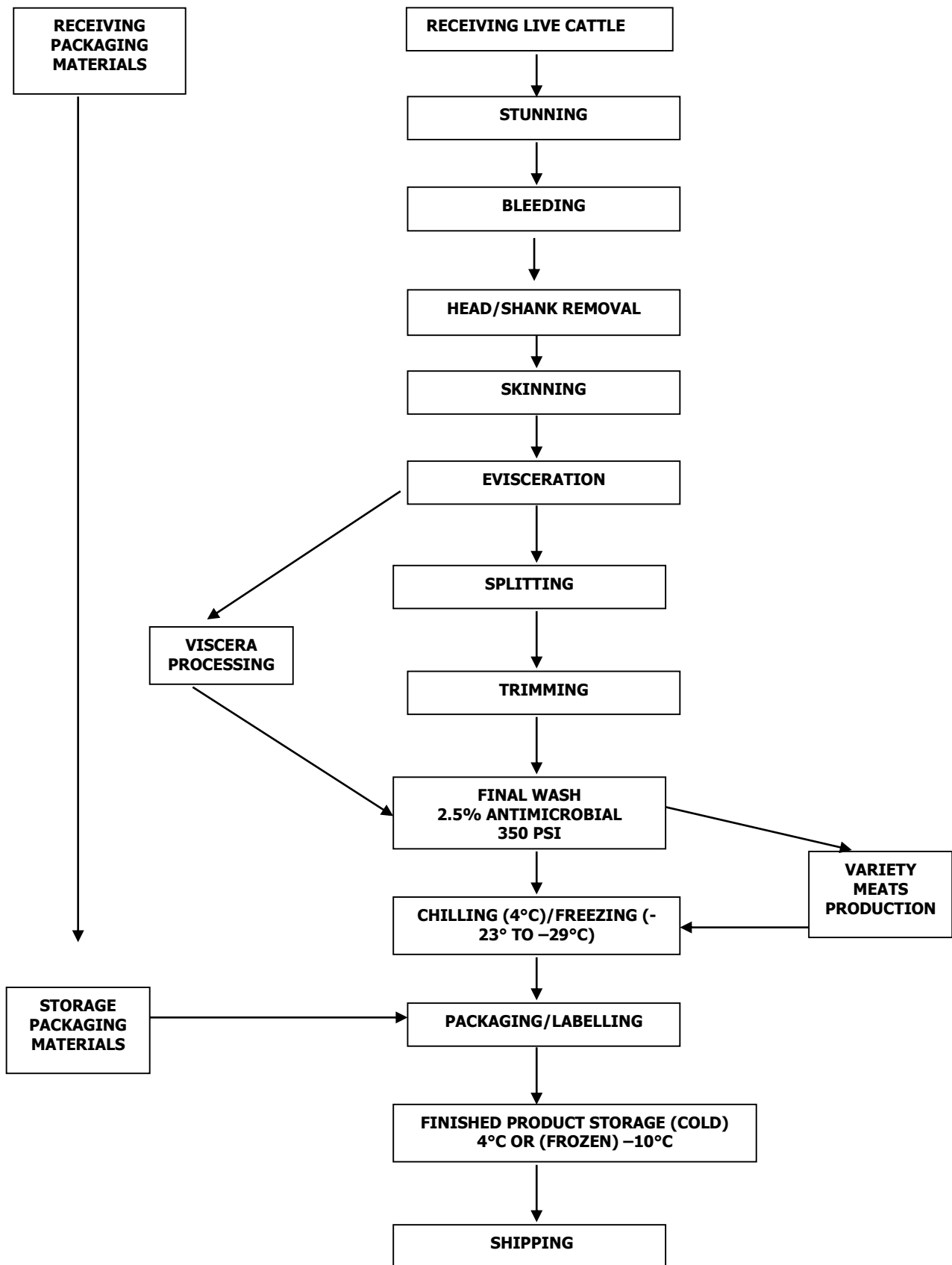


Figure 1: Flow Diagram for Cattle Slaughter/Beef Production