Mastership in Chemical Analysis

Part B Examination

Paper 1

Burlington House

Wednesday 9 October 2019

1230 - 1530
Instructions

Answer five questions out of eight.

The answers to each question must be returned in the examination script booklets provided. All examination scripts must be handed in at the end of the examination.

The marks allocated to each question are given.

Unless otherwise stated, references to Statutes in England include the equivalent alternatives for Scotland, Wales and Northern Ireland.

Unless otherwise stated, any reference to Statutes includes the EU regulations that they enforce.

1. Using examples, discuss how you would analyse and interpret the results for:
   a) unregulated mycotoxins  
      10 marks  
   b) marine biotoxins  
      10 marks

2.  
   a) Identify the compositional standards and state in brief the analysis required for the official control of dairy products.  
      14 marks  
   b) Detail how you would analyse for fat in:
      i. Milk  
      ii. Yogurt  
      iii. Cheese  
      6 marks
3. 
   a) Outline the main provisions of the Fruit Juices and Fruit Nectars Regulations 2013. 
      14 marks
   
   b) Detail how you would approach the analysis of a fruit juice drink. 
      6 marks

4. Discuss the relevant legislation, standards and analysis applicable for each of the following:
   a) Fresh tuna
   b) Whisky based liqueur
   c) Steak and kidney pie
   d) Cereal based snack
      20 marks
5. The Food Information Regulations 2014 have been in force since 13 December 2014.

a) List three foods which are not required to bear a list of ingredients.  

b) What are the specific provisions concerning the indication of ingredients by descending order of weight for each of the following categories of ingredient:
   i. Added water and volatile products
   ii. Mixtures of spices or herbs, where none significantly predominates
   iii. Ingredients constituting less than 2% of the finished product
   iv. Refined oils

6.

a) Outline the relevant legislation and guidance that covers the microbiological safety of food.

b) What examination would you carry out on each of the following ready to eat foods?
   i. Raw milk cheese
   ii. Rice based food
   iii. Vacuum packed food
   iv. A cooked sliced meat
7. Give an outline of the relevant legislation which governs the presence of acrylamide in food and include in your answer:
   • Its formation
   • Any health effects
   • Methods of analysis
   • Ways of controlling acrylamide in one chosen product type

20 marks

8.

a) Outline the current system for the authorisation of novel foods.

14 marks

b) Discuss the authorisation status and requirements for each of the following:
   i. Chia seeds
   ii. CBD oil
   iii. Geranium
   iv. Raspberry ketones

6 marks