Mastership in Chemical Analysis

Part B Examination

Paper 2

Online

Thursday 15th October 2020

1000 - 1300
OFFICIAL

Instructions

Answer one question from section 1, two questions from section 2, one question from section 3, and one more question, chosen from any of the remaining questions in section 1 and section 2 (Five questions in all).

The answers to each question must be returned in the examination envelope 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.

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Food law and policy (Section 1)

1. Discuss the growing consumer trend towards vegan, vegetarian and plant-based foods. Include in your answer how they should be named, consumer perceptions of the terms, any health-related or other regulatory issues.

20 marks

2. The World Health Organisation defines the risk assessment of food as "the scientific evaluation of known or potential adverse health effects resulting from human exposure to foodborne hazards". Discuss both the microbiological and chemical risks, including the current organisations who carry this out and the evaluation processes in place. Give examples of particular areas where risk assessments are applied to food.

20 marks
3. Outline the regulatory control for the use of genetically modified organisms (GMOs) as ingredients in animal feed. Describe the analytical approach from sample receipt to final reporting required for the identification of authorised GMOs in a compound feed containing soya, maize and rapeseed.

20 marks

4.


10 marks

b) What are the definitions of each of the following:
   I. Sampled portion
   II. Incremental sample
   III. Aggregate sample
   IV. Final sample

(1 mark each)

4 marks

a) Outline the instructions given for an incremental sample of each of the following:
   I. Non-homogenisable liquid feed
   II. Packaged feed

(2 marks each)

4 marks

b) How should the quantitative result of any undesirable substance(s) in an animal feed be treated in order to establish if it is non-compliant?

2 marks

5.

a) Outline the labelling requirements for feed additives and how they should be labelled in a compound feed.

14 marks

b) Define the following terms:
   I. Complementary feed
   II. Mineral feed
   III. Feed additive

(2 marks each)

6 marks
6. There is a growing trend for pet owners to buy raw pet food to feed to their animals. Discuss the rationale behind this, any issues this raises and the analysis required to ensure that the feed is fit to sell.

20 marks

Water (Section 3)

7. 
   a) Detail the compositional and labelling requirements for a bottled spring water.

10 marks

b) Outline the testing required to check the following parameters in the water:

   I. Bicarbonate
   II. Sodium
   III. Chloride
   IV. Dry residue
   V. pH

(2 marks each)

10 marks

8. 
   a) Outline the main provisions of the legislation governing public water supplies.

15 marks

b) A dwelling has a private water supply which contains a high level of dissolved iron. Discuss the consequences of this and what could be done to rectify the adverse level.

5 marks

END OF PAPER