



Mastership in Chemical Analysis

Part B Examination

Paper 2

Burlington House

25th April 2024

1000 – 1400

Plus 10 minutes reading time

Instructions

Question 2

- (a) Discuss the principles of Hazard Analysis and Critical Control Point (HACCP) and include examples in your answer.

(10 marks)

- (b) The majority of prepacked foods are required to be marked with an appropriate durability indicator.

Discuss the different approaches available to determine the shelf life of food products. Include in your answer, with examples

Question 4

(a)

Agriculture (Section 2)

Question 5

(a) What is the major source of EACH of the following contaminants in animal feed? What are their effects on animals and their implications for the food chain?

- (i) Vinyl thiooxazolidone
- (ii) Melamine
- (iii) Dioxins & dioxin-like PCBs
- (iv) Fumonisin
- (v) Arsenic

(3 marks each = 15 marks)

(b) What role do EACH of the following nutrients have in plant growth and what is a typical symptom of their deficiency?

- (i) Boron
- (ii) Copper
- (iii) Phosphorus
- (iv) Calcium
- (v) Chloride

(2 marks each = 10 marks)

Question 6

- (a) A manufacturer of pet foods wants to expand his manufacturing into the production of raw pet foods which would be for retail sale.

Detail the systems he would have to put in place to ensure the final product meets the legislation in terms of composition and safety as well as meeting the labelling requirements. Include in your answer examples of different types of raw pet food products that may require different standards.

(15 marks)

- (b) For EACH of the following, decide as to whether there is a 'significant' or 'insignificant' microbiological hazard and include your reasoning for your answer.

- (i) Listeria monocytogenes in a semi-moist pet food (14-60% moisture)
- (ii) ~~6DOPREFOODLQZWSHWIRRGPRLVW~~H
- (iii) (~~Q~~)HUREDFWHULDFHDHLQZWSHWIRRGPRLVWH
- (iv) 6WDSKORFRFFXDMHXLQZWSHWIRRGPRLVWH
- (v) 6DOPREFOODLQGU\$HWIRRG"PRLVWH

(2 marks each = 10 marks)

END OF PAPER