



PIABC LEVEL 5 DIPLOMA IN PACKAGING TECHNOLOGY

(Qualification Number: 600/0017/X)

EXAMINATION PAPER

June 2022

L/502/5924 UNIT 03

Packaging Processes

INSTRUCTIONS TO CANDIDATES

You are required to answer and pass **ALL** the questions

Write your answers in the answer book provided

Wherever possible, use diagrams to illustrate your answer

This is a closed book examination

Reading Time: 5 minutes

Examination Time: 3 Hours

INSTRUCTIONS TO CANDIDATES

You are required to answer **ALL** the questions on this paper

Learning Outcome 1

Understand the packaging design and development process

(This question is worth 20% of the marks for this unit)

Question 1

- A) Briefly describe the key stages in the design and development process to launch a new more environmentally sustainable plastic drinks pack with significant recycled content from initial concept to launch. (10 marks)
- B) Identify and briefly describe the tests which would be required to ensure that the product has the greatest chance of being successful. (10 marks)

Learning Outcome 2

Understand the main printing and decoration processes used in packaging

(This question is worth 20% of the marks for this unit)

Question 2

- A) Define and explain the following printing terms:
- Hue (1 mark)
 - Brightness (1 mark)
 - Saturation (1 mark)
- B) Explain how printing processes use the process colours (CMYK) to produce photographic images. (5 marks)
- C) Describe, with aid of diagram, the offset lithographic printing process for a 3-colour and varnished carton. (12 marks)

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Learning Outcome 3

Understand packaging machinery and packaging line operations

(These two questions are worth 40% of the marks for this unit)

Question 3

- A) Describe the packing operation for packaging six individual apple pies (pre-baked in single aluminium trays) from receipt of packaging components to product ready for despatch to customer. (14 x 1 mark)
- B) Outline how accumulators can improve the efficiency of a filling line. (3 marks)
- C) Discuss the relative merits of shrink and stretch film to stabilizing pallet loads (3 x 1 mark)

Question 4

Frozen prawns are automatically packed into film based 1kg bags.

- A) Describe how the correct amount of product can be metered. (6 x 1 mark)
- B) The frozen prawns are filled on a vertical form fill seal bagging machine. Describe the operation of this equipment and any specific considerations required for this product. (10 x 1 mark)
- C)
 - a) Describe the factors to be considered to ensure a good heat seal. (2 x 1 mark)
 - b) How can this seal be assessed? (2 x 1 mark)

Learning Outcome 4

Understand how quality systems impact on packaging

(This question is worth 20% of the marks for this unit)

Question 5

- A) Provide a definition of quality and explain how it is useful for a packer filler. (4 marks)
- B) Discuss how a quality management system could be used to ensure that a manufacturer of corrugated cases meets the needs of the users. (12 marks)
- C) It has been said “You cannot inspect quality into a product.” Briefly discuss if this is correct. (4 marks)

END OF EXAMINATION PAPER