



PIABC LEVEL 5 DIPLOMA IN PACKAGING TECHNOLOGY

(Qualification Number: 600/0017/X)

EXAMINATION PAPER

November 2021

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

**PIABC Level 5 Diploma in Packaging Technology
Unit 3 – Packaging Processes
November 2021**

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

You manufacture ready meals for a major supermarket in a plastic tray, lidding film and paperboard sleeve. They have suggested that you develop a new pack using more 'sustainable' materials.

Describe the packaging development process for an alternative pack from being given the above objective to a successful product established in the market. (20 marks)

Note to candidate: The focus of this question is the development process and not the solution.

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 customer wants to change the graphics on a high-volume carbonated beverage can.

- A) Describe the process of preparing for printing from received artwork to start of print run. (6 marks)
- B) Identify and describe an appropriate printing method including inks used and transfer to can. (11 marks)
- C) Discuss THREE options for checking the colour of the printed can. (3 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) A large wine bottler packs a range of still wine in glass bottles. Describe the packing process from packaging components to the packer filler to packed wine ready to despatch to the retailers. (15 marks)
- B) A key performance indicator for the packer filler is the overall equipment efficiency (OEE). Discuss what this is (2 marks) and how it can be improved (3 x 1 mark).

Question 4

- A) Describe THREE methods for level filling of liquids into containers and discuss their relative benefits and limitations. (3 x 3 marks)
- B) Describe, with aid of a diagram, the filling and sealing of 50ml hand cream into a flexible plastic printed tube. (6 marks)
- C) Discuss FIVE methods to apply variable or lot marking data to packaging and explain the benefits of each. (5 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) Define and discuss what is meant by quality in a quality management system. (3 marks)
- B) Explain the purpose of a specification for incoming goods. (6 x 1 mark)
- C) Describe what tolerance is on a measurement (1 mark) and explain why it is important to set correct tolerance levels (2 x 2 marks).
- D) Explain what is meant by the term Acceptable Quality Levels (AQL's). (6 marks)

END OF EXAMINATION PAPER