



PIABC LEVEL 5 DIPLOMA IN PACKAGING TECHNOLOGY

(Qualification Number: 600/0017/X)

EXAMINATION PAPER

June 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

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 brand is approaching its 50th anniversary (in 18 months' time) and wishes to mark the occasion by developing and launching an innovative celebratory pack.

With reference to this project, discuss the packaging development process from initiation through to launch. In your answer you must clearly identify and describe the different phases; the main participants and their responsibilities; the decisions that may be taken; and the key project milestones. (20 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) Identify and justify printing processes for the following applications:

- Corrugated case (2 marks)
- Aluminium soft drinks can (2 marks)
- Hemispherical screw on cap for personal care (2 marks)
- A wrapper for a leading brand of chocolate-based snacks (2 marks)
- Paperboard tray for a small bakery to brand their packs (2 marks)

Note to candidates: You are expected to use a different printing process for each of the above.

B) Describe SIX common printing defects. (6 x 1 mark)

C) Briefly describe TWO methods of transferring ink to a substrate using digital printing techniques. (2 x 2 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 line for packaging individually wrapped chocolate ice cream bars, which are sold in a multipack carton of six bars, from receipt of packaging materials to finished packed products ready for despatch. (14 marks)
- B) Discuss the factors which contribute to this line's overall equipment effectiveness (OEE) and for each factor provide an example how the OEE could be improved. (3 x 2 marks)

Question 4

- A) Describe and justify an appropriate method for ensuring that the required amount of product is placed into the following packs. **Use a different system for each.**
- Carbonated beer filled into glass bottle (3 marks)
 - Crisps into bag (3 marks)
 - Custard powder into a container (3 marks)
- B) Describe, with the aid of a diagram, the operation of a vertical form fill seal packaging machine for packing bags of carrots. (11 marks)

Learning Outcome 4

Understand how quality systems impact on packaging

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

Question 5

- A) Discuss what is meant by QUALITY in a quality management system. (2 marks)
- B) Identify (5 x ½ mark) and discuss FIVE core areas which need to be addressed in a quality and process control manual (5 x 1½ marks).
- C) Discuss the factors that need to be considered to determine the cost of quality. (8 marks)

END OF EXAMINATION PAPER