



## **PIABC LEVEL 3 CERTIFICATE IN PACKAGING**

(Qualification Number: 600/0455/1)

### **EXAMINATION PAPER**

**November 2019**

**R/502/5925 - UNIT A**

### **The Fundamental Principles of Packaging**

#### **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: 2 Hours

**PIABC Level 3 Certificate in Packaging  
Unit A – The Fundamental of Principles of Packaging  
November 2019**

**INSTRUCTIONS TO CANDIDATES**

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

**Learning Outcome 1  
Understand the role and functions of packaging  
(25 marks)**

**Question 1**

*A sauce is packed in a labelled 1 litre glass jar with a metal lug closure. Six jars are collated into a shelf ready corrugated case, which are palletised 20 cases to a layer and stacked seven layers high. The pallet is stabilised with stretch wrap. The product is shelf stable at ambient temperatures.*

For this pack:

- A) List the SIX main functions of packaging. (6 x ½ marks)
- B) Explain how this primary package performs the functions of packaging (6 x 1½ marks) and why each one is important (6 x ½ mark).
- C) Explain how this secondary packaging performs the functions of packaging (5 x 1½ marks) and why each one is important (5 x ½ mark).

**Learning Outcome 2  
Understand the major packaging materials and  
how they are combined to form packaging components  
(25 marks)**

**Question 2**

- A) A liquid carton (such as a Tetra Pak) for a long life apple juice is constructed from a multi-layer laminate material. Identify the materials layers in this pack and explain their function. (9 marks)
- B) List EIGHT different properties of a bottle to contain a carbonated soft drink. Against each property, compare the relevant merits of glass and polyethylene terephthalate (PET). (8 x 2 marks)

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**Learning Outcome 3**  
**Understand the packaging development processes**  
(20 marks)

**Question 3**

- A) Describe, using examples, THREE different reasons for implementing a pack change by a packer/filler or brand owner. (3 x 1 mark)
- B) When developing packaging for a new chilled food product suitable for home freezing; identify SIX technical factors to be considered and explain why each is important. (6 x 2 marks)
- C) Identify FIVE typical roles/disciplines that should be involved in all packaging development projects. For EACH, briefly describe why they are required. (5 x 1 mark)

**Learning Outcome 4**  
**Understand packaging costs and quality systems**  
(15 marks)

**Question 4**

- A) Discuss SIX factors you need to consider when ordering packaging components to optimise order quantities. (6 x 1 mark)
- B) Define fixed and variable costs (2 marks) and provide TWO examples of each (2 marks).
- C) Discuss why in the long run all costs are variable. (2 marks)
- D) Briefly describe THREE different types of quality costs and provide an example of each. (3 marks)

**Learning Outcome 5**  
**Understand the relationship between packaging and the environment**  
(15 marks)

**Question 5**

Identify FIVE methods of managing packaging waste and discuss their relative advantages and disadvantages. (5 x 3 marks)