



**PIABC LEVEL 5 DIPLOMA  
IN PACKAGING TECHNOLOGY (QCF)**

(Qualification Number: 600/0017/X)

**EXAMINATION PAPER**

**June 2017**

**L/502/5924 UNIT 03**

**Packaging Processes**

Reading Time: 5 minutes

Time Allowed: 3 Hours

You are required to answer and pass ALL the learning outcomes

Write your answers in the answer book provided

Wherever possible, use diagrams to illustrate your answer

This is a closed book examination

Issued under the authority of the  
**PACKAGING ASSESSMENT BOARD**  
23 May 2017

**PIABC Level 5 Diploma in Packaging Technology (QCF)**  
**Unit 3 – Packaging Processes**  
**June 2017**

**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 SIX main steps in a packaging development process. (6 x 1 mark)
- B) Identify and explain the information required to assemble a complete packaging brief. (14 x 1 mark)

**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**

You are briefed to produce an 8 colour gravure printed film for a range of chocolate bars. This is a very high volume range and will be sealed with cold seal adhesive.

- A) Describe the gravure print process in detail, with the aid of diagrams, explaining:
  - a) the construction and manufacture of the printing cylinders and the two main methods of engraving (4 marks)
  - b) the type and composition of ink used (3 marks)
  - c) the printing and finishing process itself to create a reel of film for despatch to the packer (9 marks)
- B) What are the advantages (4 x ½ mark) and disadvantages (4 x ½ mark) of this print process for the product above?

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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 a packaging line for the packaging of sliced cooked meats, from the supply of packaging materials into the store to finished product ready to dispatch to the customer. (1 x 14 marks)
- B) A key performance indicator for the packer filler is the overall operating efficiency (OEE). Discuss what this is (2 marks) and how it can be improved (4 marks).

**Question 4**

- A) Gravity, vacuum or pressure can be used to fill liquids into containers. Describe these filling methods and discuss their relative merits. (3 x 3 marks)
- B) a) Describe the operation of a thermoform fill and seal machine, which is used to produce and pack single servings pots of milk for the catering market. (6 marks)
- b) What are the advantages and disadvantages of the above process compared to using bought in preformed pots? (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 what is meant by a quality management system. (5 marks)
- B) Discuss how a quality management system ensures fitness for purpose of the product, using one of the following as an example (15 marks):
- A plastic bottle for bleach
  - A film for a chocolate bar
  - A corrugated transit case for the distribution of glass bottles