



PIABC LEVEL 5 DIPLOMA IN PACKAGING TECHNOLOGY

(Qualification Number: 600/0017/X)

EXAMINATION PAPER

June 2019

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
June 2019

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 design and development process to launch a new shower gel container from initial concept to launch. (9 marks)
- B) Identify and describe the roles of SIX different associated disciplines (stakeholders) involved in the process. (6 marks)
- C) Identify and briefly explain the test programmes required to evaluate how product and pack will be compatible through the life of the product. (5 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) Explain how the three primary colours are mixed to form the three process colours. (1 mark)
- B) Explain how printing uses these three process colours to produce photographic images. (3 marks)
- C) What is the key colour and what is its function? (1 mark)
- D) Describe, with aid of diagrams, the flexographic printing and finishing process for a 4-colour, varnished and foil blocked reel of pressure sensitive labels. (11 marks)
- E) The above label could be produced on digital equipment. What are the advantages and disadvantages of this process compared to flexographic printing? (4 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 filling line for a plastic bottle of liquid medicine with a child resistance closure and carton from receipt of packaging components to collated product ready for despatch to customer. (14 marks)
- B) Describe how accumulators can improve the efficiency of a filling line. (3 marks)
- C) Discuss the elements which contribute to overall equipment effectiveness. (3 x 1 mark)

Question 4

- A) Discuss how the correct weight of crisps (potato chips) could be metered into the pack. (5 marks)
- B) Describe TWO methods of metering the correct volume of sunflower oil into a glass bottle. (2 x 4 marks)
- C) Compare the use of fixed weight and variable weight approaches to pre-packed meat products intended for retail. (4 x 1 mark)
- D) Discuss THREE methods used to apply variable or lot marking data to cartons and corrugated cases. (3 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 *quality* as used in a quality management system. (1 marks)
- B) Quality costs are often described in terms of prevention, appraisal and failure. Discuss the costs associated with each of these. (3 x 3 marks)
- C) Briefly discuss the function of packaging material specifications. (4 x ½ mark)
- D) For a polypropylene (PP) film for flow wrapping produce (e.g. fruit and vegetables); describe and justify FOUR important performance characteristics relevant to the application and describe how they could be tested. (8 marks)