



PIABC LEVEL 5 DIPLOMA IN PACKAGING TECHNOLOGY

(Qualification Number: 600/0017/X)

EXAMINATION PAPER

June 2018

J/502/5923 UNIT 02

Packaging Materials and Components

Paper B

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

This examination paper is worth 30% of the total marks for Unit 2

Reading Time: 5 minutes

Examination Time: 2 Hours

Issued under the authority of the
PACKAGING ASSESSMENT BOARD
14 May 2018

YOU ARE REQUIRED TO ANSWER **ALL** THE QUESTIONS ON THIS PAPER

Learning Outcome 4
Understand the raw materials, properties and applications of packaging adhesives

Question 1

- A) Justify an appropriate adhesive and describe how a bond is achieved for each of the following:
- Construction of corrugated board (4 marks)
 - Label on returnable beer bottle (4 marks)
 - Chocolate bar wrapper (4 marks)
 - Adhesive tape (4 marks)
- B) A multi-ply paper sack is formed by folding the layers of paper into a tube and sealing with a PVA adhesive. These seals on the sack are failing in use.
- a) Discuss the possible causes of this seal failure. (5 x 2 marks)
- b) Describe how the performance of the joint could be assessed. (4 marks)

Learning Outcome 5
Understand the different types of labels and the materials used

Question 2

- A) For sauces packed in glass jars; describe the advantages and disadvantages of using:
- glue applied paper labels (6 x 1 mark)
 - full body shrink sleeve labels (6 x 1 mark)
- B) With the use of examples; describe the types of face materials, adhesives and carrier webs used for pressure sensitive labels (PSL). (12 marks)
- C) Discuss the benefits of injection in-mould labelling for the manufacture of an ice cream container. (6 x 1 mark)

Learning Outcome 6
Understand closure systems and the factors that affect seals

Question 3

- A) Describe, with the use of appropriate diagrams, the closure system, including materials, design and application method, for the following closure mechanisms and give an example where each closure type is used:
- 1) Roll on pilfer proof closure (7 marks)
 - 2) Induction heat seal with wad closure (7 marks)
 - 3) Crown closure (7 marks)
- B) Identify **THREE** types of child resistance packaging and explain how child resistance is achieved. (3 x 2 marks)
- C) Briefly describe how child resistant closures are assessed. (3 marks)