



PIABC LEVEL 5 DIPLOMA IN PACKAGING TECHNOLOGY

(Qualification Number: 600/0017/X)

EXAMINATION PAPER

November 2019

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

INSTRUCTIONS TO CANDIDATES

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) Describe THREE theories of adhesion. (3 x 3 marks)
- B) Adhesives often must “set” after application. Describe three processes by which adhesives set and provide an example of each. (3 x 3 marks)
- C) Corrugated cases are often constructed using a different adhesive for construction of the corrugated board, the creation of the manufacturer’s joint and closing the flaps once the case is filled. Justify the use of a particular adhesive for each of these applications. (3 x 3 marks)
- D) Explain why more adhesive does not always mean improved bond performance. (3 marks)

Learning Outcome 5

Understand the different types of labels and the materials used

Question 2

- A) A bottle of wine is labelled with a glue applied metalised paper label, which has been printed and embossed.
 - 1. Describe an appropriate paper for this application. (2 marks)
 - 2. Discuss the material properties to be considered when specifying, manufacturing and applying this label. (6 marks)
- B) Discuss the advantages and disadvantages of shrink sleeves compared to self-adhesive (pressure sensitive) paper labels. (16 x 1 mark)
- C) Discuss the benefits of using in-mould labelled containers for butter and yellow fat products. (6 marks)

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

Question 3

1. 70cl glass bottle of wine
2. A printed plastic wrap for an ice cream bar
3. A metal retort can of soup
4. A two ply paper sack containing 10 litres of cat litter (clay)
5. A plastic bottle for tomato ketchup

For EACH of the above packed products:

- Describe, using a diagram where appropriate, how you would achieve a closure. (5 x 4 marks)
- Explain why you would use the chosen method for the products. (5 x 1 mark)
- How would you assess the closure efficiency and integrity for the products? (5 x 1 mark)