



PIABC LEVEL 5 DIPLOMA IN PACKAGING TECHNOLOGY

(Qualification Number: 600/0017/X)

EXAMINATION PAPER

November 2021

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
30 October 2021

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) Mechanical adhesion describes the process where the adhesive is mechanically or physically keyed into surface. Describe two other theories of adhesion. (2 x 3 marks)
- B) Discuss FOUR different adhesive types giving an example of where they could be used. (4 x 4 marks)
- C) A laminated polymer film is peeling apart. Discuss EIGHT possible reasons for this failure. (8 x 1 marks)

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

Question 2

- A) For each of the following packs discuss a suitable label type, substrate and method of application. A different label type must be used for each product. (5 x 3 marks)
- Tub containing a fatty spread (e.g. margarine)
 - 2-litre plastic soft drink bottle
 - Contoured bottle for shower gel
 - Can of food
 - Thermoformed tray of meat with lidding film
- B) Discuss why we will continue to use plastic labels despite current concerns regarding use of plastics. (7 marks)
- C) Briefly describe a typical manufacturing process for the production of a self-adhesive label and justify the materials used. (8 marks)

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

Question 3

- A) Discuss, using examples, FIVE different requirements of closure systems. (5 x 2 marks)
- B) Describe how an effective closure is achieved for each of the following packs:
- A food can (5 marks)
 - A linerless cap on carbonated drink bottle (5 marks)
 - A locking tuck flap carton (5 marks)
 - A flexible retortable pouch (5 marks)

END OF EXAMINATION PAPER