



PIABC LEVEL 5 DIPLOMA IN PACKAGING TECHNOLOGY

(Qualification Number: 600/0017/X)

EXAMINATION PAPER

November 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

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 the TWO theories of adhesion. (5 marks)
- B) Justify why the adhesive identified below is appropriate for each application (4 x 2 marks) and describe the process of how the adhesive bond is achieved (4 x 2 marks):
- A starch adhesive used for construction of corrugated board.
 - A polyvinyl acetate (PVA) used for the manufacture of a manufacturer's joint on a carton board box.
 - A hot melt adhesive for closing the flaps on corrugated cases.
 - An acrylic based adhesive for a self-adhesive label.
- C) A laminated film has delaminated in places; discuss possible reasons for this. (9 marks)

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

Question 2

A soft drink is packed in a glass bottle with an oval shaped label.

- A) a) Discuss FIVE important properties of the paper substrate for an oval wet glue paper label. (5 x 1 mark)
- b) How would these properties be assessed? (5 x 1 mark)
- B) Describe the production process for an oval wet glue paper label from concept to labels ready for despatch. (10 marks)
- C) Discuss the advantages and disadvantages of the following as an alternative method of decoration:
- Pressure sensitive labels (5 x 1 mark)
 - Shrink sleeves (5 x 1 mark)

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

Question 3

- A) Discuss, using examples, FIVE key 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)