



SUMMER EXAMINATIONS 2020

EXAMINATION: UNIT 2 Packaging Materials and Containers I

COURSE: CPD Diploma in Packaging Technology

**DATE: 13th May 2020
2pm to 4pm**

EXAMINERS: Colm Munnelly, David Little

TIME ALLOWED: 2 hours

INSTRUCTIONS: Please answer four questions. All questions carry equal marks

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The use of programmable or text storing calculators, smart phones etc are expressly forbidden. Please note that where a candidate answers more than the required number of questions, the examiner will mark all questions attempted and then select the highest scoring ones.

Question 1 (25 marks)

a) Describe using a diagram, how glass is made from raw materials to the production of a glass gob. Give indications of the temperatures at each stage.

(14 marks)

b) Outline SIX properties of glass

(6 marks)

c) Discuss FIVE different methods of reducing the energy requirement to manufacture a batch of glass.

(5 marks)

Question 2 (25 marks)

a) What is Aluminium Foil? Describe the two different appearances on the surface of a foil and how they are produced.

(5 marks)

b) Aluminium sheet can be hot rolled or cold rolled. Explain what happens during each method and the characteristics of the resultant products.

(10 marks)

c) Explain the reasons why aluminium foil is a commonly used material in flexible packaging.

(10 marks)

Question 3 (25 marks)

a) With the aid of a diagram describe the typical production process for wide mouth glass jars from gob formation to the presentation of containers for annealing

(13 marks)

b) Why are surface coatings used on glass? Name where they are applied, their function and an example of each type

(7 marks)

c) Packaging designers focus on specific areas when designing glass bottles. Briefly discuss the five regions of a glass wine bottle and why they merit special consideration for designers.

(5 marks)

Question 4 (25 marks)

- a) What are the different types of pulp used in the manufacture of carton board and what are the basic differences / benefits of each type?

(15 marks)

- b) In the finishing of paperboard jumbo reels, what are the main two processes involved and what other options are available to customers?

(10 marks)

Question 5 (25 marks)

- a) Corrugated Board is used for various type of packaging. List 5 of these types and for 3 of them, suggest a grade and evaluate the properties of the material that makes it suitable for this use.

(13 marks)

- b) Evaluate the following board grade fluting types, using the terms Very Good, Good, Fair, Poor, as you see appropriate, to show the grade strengths for: Flat Crush strength, Stacking strength and Printability.

Board	Flat Crush	Stacking strength	Surface print quality
B Flute			
C Flute			
B/C Double Wall			
E Flute			

(12 marks)