



SUMMER EXAMINATIONS 2019

EXAMINATION: UNIT 2 Packaging Materials and Containers I

COURSE: CPD Diploma in Packaging Technology

**DATE: 8th May 2019
 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) With the aid of a diagram describe the production of containers using the *Blow and Blow Process* 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) When considering the design features of a glass container, briefly discuss which five areas merit special consideration
(5 marks)

Question 2 (25 marks)

- a) Discuss the production of aluminium foil from ore extraction to the preparation of foil for despatch to the customer.
(15 marks)
- b) Briefly discuss the reasons why aluminium foil is coated, listing as many reasons as possible.
(10 marks)

Question 3 (25 marks)

- a) Describe the manufacturing process for a 2-piece Drawn and Wall Ironed can suitable for packaging carbonated beer. Your description should start with a coil of metal and finish with cans ready for despatch to the packer/filler.
- Why is aluminium a suitable material for this process?
- Why is Drawing and Wall Ironing suitable for beverage cans?
(15 marks)
- b) Describe some of the advantages and disadvantages of using impact extruded (collapsible) metal tubes?
(5 marks)
- c) Describe how both retort packaging and aseptic packaging produce a shelf stable product and the difference between the two. What is a typical retort temperature?
(5 marks)

Question 4 (25 marks)

- a) List 5 different types of carton board packaging and describe in a few words their difference or use.

(5 marks)

- b) Pick one of these types of carton board packaging, choose and describe a suitable product of your choice and briefly list the production steps in converting the carton board to your chosen type of packaging. Start from approved artwork and keyline, listing and describing the production stages / steps to up to a packed outer.

(10 marks)

- c) List three (3) different types of board used to make cartons.

Describe the composition of two (2) of these types and the typical end-use for that board type. Show in an annotated diagram the make-up of the layers, in your chosen two board types.

(2 X 5 marks)

Question 5 (25 marks)

- d) List and describe the three types of pulp used in the preparation and manufacture of paperboard and evaluate their differences / benefits and where they are typically used in packaging boards.

(15 marks)

- e) List the production stages of manufacturing paperboard from forestry to packing the product for distribution.

(10 marks)