



SUMMER EXAMINATIONS 2015

EXAMINATION: **UNIT 1 Fundamentals of Packaging Technology and Packaging in the Supply Chain**

COURSE: **CPD Diploma in Packaging Technology**

DATE: **20th May 2015**
10am to 12pm

EXAMINERS: Colm Munnelly, Ron Gardiner, Tony Duffy

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) Discuss **THREE** ways in which primary and secondary packaging have evolved to meet the requirements of retailing products through modern supermarkets.
(3 x 5 marks)
- b) Packaging is often considered to be environmentally wasteful by the general public. Discuss how packaging can become more environmentally friendly.
(10 marks)

Question 2 (25 marks)

- a) Briefly describe the functions of packaging
(7 marks)
- b) Pharmaceutical tablets can be packed in a blister pack and a carton or a plastic bottle. Discuss how both of these packaging formats perform the function of packaging.
(18 marks)

Question 3 (25 marks)

- a) Discuss how the stability of a palletized collection of corrugated cases can be improved.
(10 marks)
- b) Discuss how environmental conditions can present a hazard to products and packs.
(5 marks)
- c) Discuss the factors which will affect the probability of a packed product being dropped during manual handling.
(5 marks)
- d) How can the ability of packaging to protect products during distribution be assessed?
(5 marks)

Question 4 (25 marks)

- a) Why would you use Pallet Design (Optimisation) Software? Include TEN typical outputs that you would expect to see on a Pallet Diagram used by such a program.
(10 marks)
- b) Discuss FIVE design considerations that need to be assessed to ensure the compression strength of a case is not reduced to an unacceptable level while in use.
(5x2 marks)
- c) Sketch and label the packaging design sequence you would consider when designing packaging for a new fruit roll biscuit using pallet design software. Include primary secondary and tertiary packaging. Why is it important to consider all of these elements at the design stage?
(5 marks)

Question 5 (25 marks)

A consumer electronic product, sold via an online retailer, is packed in a plastic bag with expanded polystyrene end caps and placed in a corrugated board outer case.

- a) Describe an appropriate distribution system for this product from manufacturer to consumer.
(5 marks)
- b) Identify 5 hazards which the product could encounter and indicate where they are likely to occur. Describe the impact of the 5 hazards on the product or pack and discuss how the effect of these 5 hazards can be mitigated by packaging and process design.
(20 marks)