



SUMMER EXAMINATIONS 2015

EXAMINATION: **UNIT 4 Package Printing and Decorating & Packaging Machinery**

COURSE: **CPD Diploma in Packaging Technology**

DATE: **21st May 2015**
 2pm to 4pm

EXAMINERS: Tony Duffy, David Little, Ron Gardiner

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) Name the primary and subtractive secondary colours?
(5 marks)
- b) How does the use of these colours provide the basis for all graphic printing?
(10 marks)

When specifying and checking the colour printing of packaging:

- c) What affects our perception of colour?
(5 marks)
- d) When making reference checks to the printed packaging, what are the key elements and factors to consider?
(5 marks)

Question 2 (25 marks)

- e) Discuss the benefits of Digital printing and its advantages over traditional Lithographic printing. Discuss the breakeven point of where Digital stops and Lithographic begins and explain why this is the case.
(15 marks)
- f) Discuss what impact do you think Digital printing will have on the Print & Packaging Industry in the future and give your opinion on whether it will grow in importance?
(10 marks)

Question 3 (25 marks)

- a) Briefly describe a vertical form fill seal line filling and closing operations for producing 2.5 kg bags of potatoes.
(10 marks)
- b) For the line described above what are the important material characteristics for this line
(7 marks)
- c) Describe four methods of adding variable data to packs and discuss where each can be used.
(8 marks)

Question 4 (25 marks)

- a) Very briefly describe the main equipment units on an automated line for packing 500ml bottles of carbonated soft drink. Discuss the equipment running speeds for this equipment to enable this line to produce 20,000 bottles per hour.

(9 marks)

- b) Discuss how accumulation can be used to improve line efficiencies.

(7 marks)

- c) Discuss the use of overall equipment effectiveness as a tool for assessing line efficiencies.

(9 marks)

Question 5 (25 marks)

- a) Describe with the aid of a diagram the on line activities from raw material receipt to finished goods despatch for producing a pack of luxury chocolate chip cookies.

(15 marks)

Justify the use of the following materials for primary packaging

- b) A PS Tray to collate the biscuits **(2 marks)**

- c) A MOPP/PE laminate film for the primary pack around the cookies **(3 Marks)**

- d) List 5 key material/ machine parameters to control that may affect the seal integrity of the pack of cookies. **(5 Marks)**