



SUMMER EXAMINATIONS 2017

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

COURSE: **CPD Diploma in Packaging Technology**

DATE: **May 11th 2017**
 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) Four of the most common print processes are Gravure, Litho, Dry Offset and Flexography. Pick 3 of these and briefly describe the type of plate used for each process, whether the plate is right or wrong reading and how the image is created on the plate.

(15 marks)

- b) Describe briefly 10 of the 15 pre-press terms listed below:

- i. CMYK
- ii. Resolution
- iii. Density
- iv. Special colour
- v. Trim marks
- vi. L*a*b*
- vii. Fingerprint test
- viii. Lpi / dpi
- ix. Repro
- x. Keyline
- xi. RGB
- xii. Retouching
- xiii. PMS
- xiv. Grip / trapping
- xv. Register marks

(10 marks)

Question 2 (25 marks)

- a) In the design of a new FMCG product, describe the stages of design development from the creative to print ready files.

(10 marks)

- b) List and evaluate the three fundamental messages used by Marketeers in the design and promotion of a product and asked by customers when they are considering buying a product. Is one more important than the other? Give a reason for your answer.

(15 marks)

Question 3 (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 extruded crisps.

(20 marks)

- b) Review key material/ machine parameters to control that may affect the seal integrity of the pack of crisps.

(5 Marks)

Question 4 (25 marks)

- a) A packaging line consists of a bottle feeder, filler, labeller and case packer. The running speeds and efficiency of the equipment are given below. What is the expected output from this line?

Feeder	125 bottles per minute, 80% efficiency
Filler	100 bottles per minute, 90% efficiency
Labeller	120 bottles per minute, 85% efficiency
Case packer	140 bottles per minute, 80% efficiency

(5 marks)

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

(8 marks)

- c) Describe what overall equipment effectiveness is and discuss how it could be improved.

(12 marks)

Question 5 (25 marks)

- a) Describe the manufacturing process for a frozen chicken curry ready meal from receipt of raw material to dispatch of finished goods. Include in your answer a justification for all types of filling processes used.

(20 marks)

- b) For the product described above, what are the important material characteristics for the production line and the product

(5 marks)