



REPORT ON THE JUNE 2023 EXAMINATIONS

PIABC LEVEL 3 CERTIFICATE IN PACKAGING

(QN: 610/0741/9)

AND

PIABC LEVEL 5 DIPLOMA IN PACKAGING TECHNOLOGY

(QN: 610/0740/7)

Version: 13/09/2023

PIABC LEVEL 3 CERTIFICATE IN PACKAGING

This examination is assessed by a 2-hour examination of short answer questions making up a total of 100 marks. Candidates are required to achieved 50% to pass the examination.

MARKERS/MODERATORS REPORT

Common Errors by Candidates

- A poor understanding of packaging materials and processes let candidates down. This also included a lack of knowledge in printing and decoration.
- The majority of the marks lost by candidates for not providing answers rather than incorrect information.

Overall Impression

- Some candidates did very well whilst others struggled especially with the more technical questions in particular Unit D (Materials) and Unit E (Printing).
- Overall grading was good to excellent.

PIABC LEVEL 5 DIPLOMA IN PACKAGING TECHNOLOGY

UNIT 1: UNDERSTAND THE ROLE AND FUNCTIONS OF PACKAGING

This unit is assessed by a 2-hour examination and candidates must answer eight questions. Two questions are worth 20 marks each and a further 6 questions are 10 marks each. Candidates are required to achieved 50% to pass the examination.

MARKERS REPORT

Overall Impression of Candidates' Performance

Generally good. In the papers marked only one poor performer (and that was due to the lack of depth in the answers).

Common Errors

Occasional misunderstanding of the detail required, or an underestimate of the number of examples expected in an answer. Generally, there was not a specific error that dominated (in any question).

SECTION 1

TWO QUESTIONS - 20 MARKS EACH

Question 1

For ONE of the following products available from supermarkets:

- Over the counter pain relief tablet
- Chicken curry ready meal

- A) Describe an appropriate primary and secondary packaging to pack the chosen product. (4 marks)
- B) Fully discuss how this packaging (primary and secondary) works to perform the functions of packaging. (16 marks)

Summary of what was expected in the answer

- A) A wide range of potential pack formats and materials can be selected. Any reasonable pack should be accepted for both primary and secondary packs. The pack format should be identified/described, and the material type stated for all the components needed. For e.g., chicken curry primary pack is plastic tray, plastic lidding film and paperboard sleeve.
- B) Identification of each function. How the pack performs the function must be discussed. A wide range of functions is acceptable however candidates need to cover the whole range for full marks, three functions on providing 3 types of information is not acceptable. (Contain protect preserve inform sell convenience economically acceptable, environmentally acceptable legally compliant).

Examiners comments on students' performance, quality of answers and how students could answer better in the future

- Generally, well answered but marks lost when candidates did not explain the information function on the secondary packaging.
- Most candidates scored well on this question. The main reasons for losing marks related to not developing the answers. The question expects a discussion on the pack performance rather than a list of functions and an example of how the pack achieves this.

Question 2

A branded perfume is packed and shipped globally for sale in airport duty free shops.

- A) Briefly describe the primary, secondary and tertiary packaging that could be used to pack this product. (4 marks)
- B) Discuss the major hazards that this product will encounter within this supply chain and how the packaging works to ensure that the product is in an acceptable condition for the consumer. (16 marks)

Summary of what was expected in the answer

- A) The description should include all levels of packaging and include all the major components.
- B) Expect a discussion of the major hazards:
- Vibration
 - Shock
 - Compression
 - Puncture
 - Environmental contamination or impacts
 - Product theft
 - Loss of key ingredients (e.g. smell or alcohol level)
 - Pressure changes
 - Temperature

For each hazard expect a description of the hazard, how the hazard may damage the pack, and how the pack can mitigate against the hazard causing damage.

Examiners comments on students' performance, quality of answers and how students could answer better in the future

- Some good answers but candidates did not think through the potential hazards the product could encounter in the supply chain.
- Most candidates scored reasonably well on this question. The main reasons for losing marks related to not developing the answers. The question expects a discussion on the pack performance, some answers were generic and not well focused on the nature of this product and proposed pack. Few answers considered the importance of the image of the carton as the sales unit and just focused on the glass bottle. The relative importance of the hazards faced by the product were seldom considered.

SECTION 2

SIX QUESTIONS - 10 MARKS EACH

Question 3

In many “developed” countries we have aging populations.

Discuss the implications of this for the packaging manufacturers and users. (10 marks)

Summary of what was expected in the answer

Expect a discussion of at least 3 - 5 impacts of an aging population:

- Loss of dexterity in sight and hands
- Smaller & single person households
- Less interest in novel new products, familiarity
- Increased health expenditure
- Loss of labour – shrinking workforce

For each point expect a statement of the impact where appropriate the mechanism and a discussion of how these impact on packaging.

Examiners comments on students’ performance, quality of answers and how students could answer better in the future

- Candidates were expected to discuss implications such as loss of dexterity in sight and hands along with how the packaging can be designed to help this situation.
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- Most candidates scored reasonably to well on this question. The identified key issues for aging population e.g., dexterity loss, eyesight loss and smaller households. Most identified ways in which packaging could change some including examples. Few provided a depth or discussion are argument to gain full marks.

Question 4

Using FOUR examples, evaluate how active and/or intelligent packaging could be used to reduce product wastage. (10 marks)

Summary of what was expected in the answer

Markers allowed a broad interpretation of active and smart packaging. Examples do not have to be commercially used at present. Technology could include:

- Adsorbers (oxygen, moisture, ethylene)
- Emitters (CO₂, ethanol)
- Time temperature indicators
- Oxygen indicators
- Antimicrobial materials

A description of what the packaging does, how the pack is different from non-active/smart packaging and how this can impact on shelf life.

Examiners comments on students' performance, quality of answers and how students could answer better in the future

- Generally, well answered. Important that candidates described what the packaging does, how the pack is different from non-active/smart packaging and how this can impact on shelf life.
- Marks were mixed with a few candidates achieving high scores and some low, most scores were reasonable. Identifying a selection of technologies was not enough to gain high marks. Some description of the technology and application is also required. Examples of use would also assist in improving marks.

Question 5

Using examples, discuss FOUR characteristics of a strong brand. (10 marks)

Summary of what was expected in the answer

Characteristic, discussion, and example expected.

Characteristic:

- Protectable
- Unique
- Relevant
- Distinctive
- Coherent

Expect examples of products/brands and their features which enable these characteristics to be achieved.

Examiners comments on students' performance, quality of answers and how students could answer better in the future

- A characteristic of a strong brand includes making it distinctive. Examples of such brands and their features which enable this characteristic need to be discussed.
- Marks were widely spread with both very low and high marks achieved. To gain high marks there needed to be a clear connection between the description of the characteristics and the examples selected to demonstrate these characteristics. It is not sufficient just to state the brand without discussing how that brand demonstrates the characteristic.

Question 6

A company produces a soft drink in a metal can.

- A) Briefly describe the supply chain(s) for all the packaging components used by the packer filler to pack and distribute the product. (7 marks)
- B) Briefly describe THREE distribution channels that the company may use to sell this product. (3 marks)

Summary of what was expected in the answer

- A) A wide variety of pack types may be included for secondary & tertiary packaging. Any reasonable format is acceptable. For example, collated on corrugated tray and shrink wrapped, palletized and stretched wrapped.

Can/lid - metal extraction (iron or aluminum), smelting and sheet making, can making.

Corrugated board tray - forestry operations and or wastepaper collection, pulping, sheet making, corrugated board making, box conversion.

Shrink wrap & stretch wrap - fossil fuel extraction, refining, polymerisation, film extrusion.

- B) THREE distribution channels:

- On trade - provided to distributors and then directly onto premises where it is consumed on the premises.
- Major retailers - supplied though regional distribution centers to retail stores.
- Independent fast-food outlets - supplied though cash & carry directly to the businesses.

Examiners comments on students' performance, quality of answers and how students could answer better in the future

- A mix of very good but also some poor answers as candidates described how containers were manufactured rather than the different elements of the supply chain. Also, confusion between shrink wrapping and stretch wrapping a pallet.
- Marks were generally poor. Few candidates described the supply chain for all the main items of packaging used by the packer filler. Many candidates focused on the operations undertaken by the packer filler rather than the supply chains supplying them. In part B most candidates identified the distribution channels which could be used but did not provide a description.

Question 7

Many organisations are promoting the need to develop a circular economy in packaging.

Describe what a circular economy is (2 marks) and discuss how the packaging industry should respond (8 marks).

Summary of what was expected in the answer

Description of circular economy, issues and arguments.

Description of circular economy such as: "A circular economy is an economic system of closed loops in which raw materials, components and products lose their value as little as possible, renewable energy sources are used and systems thinking is at the core."

Within the answer the candidates should describe a circular economy and to what extent downgrading material is acceptable. Is conversion of PET bottles to fleece material or corrugated board to egg carton circular?

Candidates should provide examples of where multi trip has been achieved (e.g., returnable transit cases, pallets or returnable beer or milk bottles).

Candidates should discuss product to product recycling (e.g., PET bottles recycled back into PET bottles or corrugated cases back into corrugated cases). Impact of recycling on product characteristics should be considered (E.g., paper fibres become shorted, and quality degrades).

Degrading of products should also be considered (e.g., corrugated cases into egg boxes).

Candidates should consider various levels of recycling (e.g. use of pyrolysis for chemical recycling of plastic or composting and growing more trees).

Some consideration should be given of areas where the risks associated with recycled materials and where this is not acceptable (e.g., medical / pharma packaging).

With global supply chains acceptance of disposal energy recovery and or recycling in the best local facilities may be more environmentally beneficial than trying to return for high value recycling.

Some circular packaging (e.g., returnable transit cases are not specific for individual products and therefore can make transport less efficient).

Examiners comments on students' performance, quality of answers and how students could answer better in the future

- Most candidates described what a circular economy is, however, marks were lost because of a focus on recycling materials without consideration of other options.
- Marks were mostly reasonable with few candidates scoring high or low marks. Most candidates provided good descriptions of what a circular economy would look like. Most candidates identified actions which could assist in developing a more circular economy in packaging. Few candidates discussed a wide range of issues and challenges such as loss of performance in materials or trade-offs between performance and recyclability.

Question 8

Using FOUR examples, briefly discuss how legislation requirements aim to keep consumers safe. (10 marks)

Summary of what was expected in the answer

Expect a wide of issues to be presented.

A good answer should identify a range of different legislation rather than four requirements from a single piece of legislation.

The legislation should be identified. Some inaccuracy in correct name acceptable. The requirements of the legislation should be stated and how this can impact on consumer safety discussed.

Examiners comments on students' performance, quality of answers and how students could answer better in the future

- A good answer should identify a range of different types of legislation which keep customers safe, rather than four requirements from a single piece of legislation.
- Marks were mostly reasonable to good. Candidates lost marks for not providing reasonable descriptions of the legislation or details of what the legislation required. Several candidates did not provide the four examples asked for in the questions.

UNIT 2: UNDERSTANDING PACKAGING MATERIALS & COMPONENTS (PAPER A)

Paper A is worth 50% of Unit 2 and is assessed by a 2-hour examination. The candidates must answer eight questions. Two questions are worth 20 marks each and a further 6 questions are 10 marks each. Candidates are required to achieved 50% to pass the examination.

Examination not offered by PIABC at June 2023 Examination Series.

UNIT 2: UNDERSTANDING PACKAGING MATERIALS & COMPONENTS (PAPER B)

Paper B is worth 50% of Unit 2 and is assessed by a 2-hour examination. The candidates must answer eight questions. Two questions are worth 20 marks each and a further 6 questions are 10 marks each. Candidates are required to achieved 50% to pass the examination.

Examination not offered by PIABC at June 2023 Examination Series.

UNIT 3: UNDERSTAND THE MANAGEMENT OF PACKAGING, PRODUCTION, & BUSINESS PROCESSES

This unit is assessed by a 2-hour examination and candidates must answer eight questions. Two questions are worth 20 marks each and a further 6 questions are worth 10 marks each. Candidates are required to achieved 50% to pass the examination.

Examination not offered by PIABC at June 2023 Examination Series.