FoodBev Manufacturing SETA

EXTERNAL INTEGRATED SUMMATIVE ASSESSMENT

CANDIDATE INFORMATION	
SURNAME	
NAMES	
ID NUMBER	
EISA REGISTRATION NUMBER	
ASSESSMENT CENTRE	
ASSESSMENT CENTRE ACCREDITATION NUMBER	

QUALIFICATION INFORMATION	
QUALIFICATION TITLE	**INTERMEDIATE OCCUPATIONAL CERTIFICATE: FOOD AND BEVERAGE PACKAGING OPERATOR**
SAQA ID	**121148**
NQF LEVEL	4
CREDITS	123
DURATION	2 hours
TOTAL MARKS	100
PASS MARK	50 Marks
DATE OF EISA	30 March 2026

GENERAL EISA RULES

a) Candidates are ONLY allowed to use the supplied **EISA BOOKLETS.**

b) Candidates can ONLY use a **BLACK PEN** for their answers.

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I HEREBY CONFIRM THAT I HAVE READ THE ABOVE EISA RULES AND DECLARE THAT I UNDERSTAND AND ACCEPT THE RULES

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CANDIDATE SIGNATURE

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QUESTION 1~~SECTION 1~~: COMMUNICATION, QUALITY, AND FOOD SAFETY (18 Marks)

You are completing your shift on a high-speed carbonated soft drink bottling line. During the last hour, a sensor on the labelling machine failed, causing 15 minutes of downtime. You must now prepare the production report, explain the deviation to the incoming shift operator, and ensure that the food safety standards (GMP) were not compromised during the repair.

~~QUESTION 1.1:~~ BUSINESS COMMUNICATION AND ADMINISTRATION (6 Marks)

1.1.~~1~~ **List** two (2) concepts of business communication used to ensure the technical details of a machine failure are accurately passed to the maintenance team. (2)

1.~~1.~~2 **Define** "Accountability" in the context of interpersonal relationships when a team is required to meet hourly production targets. (2)

1.~~1.~~3 **Identify** which data point is used to calculate the "Quality" component of Overall Equipment Effectiveness (OEE). (2)

A) Planned production time.
B) Number of units rejected vs. total units produced.
C) Total energy consumed
D) Number of operators on the line.

~~QUESTION 1.2:~~ FOOD SAFETY AND QUALITY SYSTEMS (12 Marks)

1.~~4~~2.~~1~~ **Define** the following terms as they apply to a packaging facility: (2)

- a) Critical Control Point (CCP)

- b) Quality Assurance (QA)

1.~~.~~2.5 ~~2~~ **List** three (3) automated inspection systems used on a packaging line to maintain quality control.
(3)

1.6~~2.3~~ **State** the technical reason why Good Manufacturing Practice (GMP) requires the segregation of packaging materials from cleaning chemicals. (2)

1.7~~2.4~~ **State** one (1) risk of food contamination that occurs if a primary container ~~(e.g., a bottle)~~ is not rinsed properly before filling. (2)

1.8~~2.5~~ **List** three (3) principles of plant cleaning and sanitation for packaging equipment. (3)

SECTION 2: PRIMARY PACKAGING SYSTEMS (12 Marks)

The production schedule requires the startup of a batch of fruit juice in a "Form-Fill-Seal" (FFS) aseptic system. You are responsible for ensuring the film is sterilized, the filling volume is calibrated, and the thermal seals are integrated correctly to prevent oxygen ingress.

~~QUESTION 2.1:~~ OPERATING PRINCIPLES (12 Marks)

2.~~1.~~1 **Describe** the operating principle of a "Volumetric Filler" and **state** how it differs from a "Level Filler." (3)

2.~~1.~~2 **Describe** the sequence of operation for "Form, Fill, and Seal" (FFS) equipment. (3)

2.~~1.~~3 **State** the technical purpose of the "Second Operation" in the double-seaming process of a metal can. (2)

2.~~1.~~4 **List** two (2) characteristics of primary packaging materials that act as a barrier against microbial contamination. (2)

2.~~1.~~5 **State** why it is critical to sanitize the capping/closing zone specifically to ensure product shelf-life. (2)

~~SECTION 3:~~QUESTION 3: SECONDARY AND TERTIARY PACKAGING (16 Marks)

A pallet of finished goods is ready for dispatch. You must verify that the inkjet coder has applied the correct "Best Before Date" and "Batch Code." You also need to ensure the secondary cardboard cases are sealed and the tertiary stretch-wrap provides enough tension for stable transport to the warehouse.

~~QUESTION 3.1:~~ CODING, INSPECTION, AND STABILITY (16 Marks)

3.~~1.~~1 **State** the importance of product coding for traceability in the event of a product recall. (4)

3.~~1~~.2 **List** two (2) types of secondary packaging systems used to bundle primary units together.

(4)

3.~~1~~.3 **Describe** how an "X-Ray Inspection System" contributes to consumer safety on a packaging line. (2)

3.~~1.~~4 **State** two (2) functions of a "Case Packer" in an automated environment. (2)

3.~~1.~~5 **State** the role of tertiary packaging ~~(e.g., stretch-wrapping)~~ in preventing physical damage during transit. (2)

3.~~1.~~6 **Name** the South African legislation that regulates the accuracy of weight and volume marks on packaged goods. (2)

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3.7.

~~SECTION~~ QUESTION 4: OPERATION OF PACKAGING EQUIPMENT (54 Marks)

You have been assigned to operate a semi-automated stand-alone "Case Taper" machine. You must perform the full process: from verifying that you have the correct tape and boxes to starting the machine, managing the production run, and performing the final shutdown and area clearance.

~~QUESTION 4.1:~~ EQUIPMENT OPERATION LIFECYCLE (54 Marks)

4.~~1.~~1 **List** and **explain** five (5) pre-start-up procedures you must perform to ensure the equipment is safe and ready for operation. (10)

4.~~1.~~2 **List** the ten (10) sequential steps required to safely start a stand-alone piece of packaging equipment and bring it to operating speed. (10)

4.~~1~~.3 **List** and **describe** five (5) critical operating parameters (e.g., air pressure, seal temperature, or conveyor speed) that you must monitor during the run. (10)

4.~~1~~.4 **List** the steps required to perform a planned shutdown of the equipment at the end of the production run. (10)

4.~~1.~~5 Describe the comprehensive post-shutdown procedures, including "Line Clearance," waste reconciliation (counting rejects), and the completion of the final shift production report. **(14)**

QUESTIONS	MARKS
Question 1	18
Question 2	12
Question 3	16
Question 4	54
	TOTAL: 100

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SECTION 1 (18 Marks)

QUESTION 1.1: COMMUNICATION & ADMIN (6 Marks)

- **1.1.1 List (2 Marks):** 1. Use of technical terminology; 2. Written log entry/Shift handover note.
- **1.1.2 Define (2 Marks):** Accountability is the obligation of an individual to take responsibility for their actions, equipment performance, and the accuracy of the production data they record.
- **1.1.3 Identify (2 Marks):** B (Number of units rejected vs. total units produced).

QUESTION 1.2: FOOD SAFETY & QUALITY (12 Marks)

- **1.2.1 Define (2 Marks):** a) CCP: A point in the process where control is essential to prevent, eliminate, or reduce a hazard. b) QA: Proactive activities designed to ensure that the process result meets standards.
- **1.2.2 List (3 Marks):** 1. Check-weigher; 2. Vacuum/Pressure sensor; 3. Vision system (label/cap check).
- **1.2.3 GMP Rationale (2 Marks):** To prevent cross-contamination and chemical migration (taint) into the food product or the packaging material itself.
- **1.2.4 Contamination Risk (2 Marks):** Physical hazard (e.g., glass shards, dust) or Chemical hazard (residual sanitizer).
- **1.2.5 Principles (3 Marks):** 1. Removal of visible soil (TOSS); 2. Application of detergent; 3. Sanitizing with approved chemicals.

SECTION 2 (12 Marks)

- **2.1.1 Explain (3 Marks):** Volumetric fills a specific volume (ml) regardless of the bottle size. Level filler fills to a specific height (mm) from the rim.
- **2.1.2 Describe (3 Marks):** 1. Film is formed into a tube/pouch; 2. Product is filled into the tube; 3. The pouch is heat-sealed and cut.
- **2.1.3 Double Seaming (2 Marks):** The second operation flattens and compresses the pre-formed hooks from the first operation to create a hermetic (airtight) seal.
- **2.1.4 Characteristics (2 Marks):** 1. Impermeability (oxygen/moisture barrier); 2. Structural integrity (puncture resistance).
- **2.1.5 Sanitization (2 Marks):** The closure is the last point of contact; any bacteria here will be sealed inside the container, leading to spoilage.

SECTION 3 (16 Marks)

- **3.1.1 Traceability (4 Marks):** It allows the manufacturer to identify exactly when the product was made, which raw materials were used, and which customers received it, enabling a targeted withdrawal. (4)
- **3.1.2 Secondary Systems (4 Marks):** 1. Shrink-wrap bundling; 2. Cardboard cartons/trays. (4)
- **3.1.3 X-Ray (2 Marks):** Detects high-density physical contaminants like metal, stone, or thick plastic that other systems might miss.

- **3.1.4 Case Packer (2 Marks):** 1. Automates the grouping of products; 2. Correctly orients products for transport.
- **3.1.5 Role (2 Marks):** Prevents shifting or collapse of the pallet during transport and protects against dust/moisture.
- **3.1.6 Legislation (2 Marks):** Trade Metrology Act.

SECTION 4 (54 Marks)

- **4.1.1 Pre-start (10 Marks):** 1. Check PPE; 2. Inspect for loose parts; 3. Verify emergency stops; 4. Check material availability (tape/boxes); 5. Check power/air supply. (2 marks per point: 1 for list, 1 for explanation).
- **4.1.2 Startup (10 Marks):** 1. Switch on power; 2. Open air supply; 3. Reset safety circuit; 4. Load consumables; 5. Set box dimensions; 6. Start conveyors; 7. Run a test unit; 8. Verify seal quality; 9. Engage auto-mode; 10. Ramp up to speed. (1 mark per step).
- **4.1.3 Parameters (10 Marks):** 1. Air Pressure (PSI); 2. Tape Tension; 3. Roller alignment; 4. Conveyor Speed; 5. Safety guard proximity. (2 marks each: 1 for name, 1 for description).
- **4.1.4 Shutdown (10 Marks):** 1. Clear in-feed; 2. Run machine empty; 3. Press Stop; 4. Isolate power (LOTO); 5. Remove unused materials; 6. Clean area; 7. Clean rollers; 8. Inspect for wear; 9. Close air valves; 10. Record end-time. (1 mark per step).
- **4.1.5 Post-shutdown ECR (14 Marks):**
  - **Line Clearance (5):** Removing all components from the previous run to prevent mix-ups.
  - **Waste Reconciliation (5):** Calculating (Input - Waste = Yield) to find hidden losses.
  - **Reporting (4):** Documenting total output, downtime reasons, and any deviations in the BPR.