



**FINAL EXTERNAL INTEGRATED SUMMATIVE ASSESSMENT –
EXEMPLAR**

OCCUPATIONAL CERTIFICATE: GRAIN DEPOT MANAGER

SAQA ID: 118686

CREDITS: 235

Date: EXEMPLAR

Marks: 300

Time: 09h00 – 12h00

Duration: 3 hours

Instructions

This paper consists of 14 pages including the cover page and three annexures. Candidates may use a non-programmable calculator.

Use the provided A4 exercise book as your answer book. Complete ANNEXURE A and ANNEXURE B on this paper, write your learner number on them, and hand them in with your answer book.

All questions are compulsory. The pass mark is 65% (195 out of 300 marks).

Question 1	(60 Marks)	Suggested time: 36 minutes
Question 2	(30 Marks)	Suggested time: 18 minutes
Question 3	(30 Marks)	Suggested time: 18 minutes
Question 4	(135 Marks)	Suggested time: 81 minutes
Question 5	(45 Marks)	Suggested time: 27 minutes

- This is a closed book assessment.
- Read the instructions for each question before answering.
- Answer the questions to each number. Clearly specify each question number in the middle of the page and draw a horizontal line after each question.
- Short answers are enough. Where a question asks for a table, use only the columns given.
- Show all calculations. Marks are given for the correct method.
- Candidates are not allowed any form of assistance and must always adhere to the invigilator's instructions.
- Any attempt at cheating will lead to disqualification.
- No cell phones are allowed.

QUESTION 1

1.1 Case study: Lichtenburg Grain Depot, North West Province

Study Tables 1.1 to 1.3. Answer Questions 1.1.1 to 1.1.4.

Table 1.1: Crop and harvest estimate – 2024/2025 summer season

Crop	Production	Planted area	Expected yield	Harvest period	Depot market share
Yellow maize	Dryland	14 000 ha	4.5 t/ha	April – June 2025	65%

Table 1.2: Silo capacity and stock on 15 February 2025

Compartment	Capacity (t)	Current stock
1	10 000	8 500 t white maize
2, 3, 4 and 5	10 000 each	Empty
Total	50 000	

Planned out-loading: 5 000 t white maize to Randfontein by 31 March 2025.

Tariffs: Handling R30/t. Storage R7/t per month (average storage period 3 months).

Market price: SAFEX yellow maize (May 2025 contract) R3 850/t.

Table 1.3: Update – 15 February 2025

The South African Weather Service reports February rainfall 40% below average. Crops are under severe moisture stress at grain fill. The **revised expected yield is 3.2 t/ha**.

1.1.1 Use Tables 1.1 and 1.2 (original yield of 4.5 t/ha) to develop an operational plan. Calculate:

- the total expected crop;
- the expected depot intake;
- the storage capacity available after the planned out-loading;
- the capacity surplus or shortfall.

Then state whether the depot can store the expected crop and give your reasons. **(15)**

1.1.2 Use Table 1.3. Calculate the revised depot intake. Then give TWO changes you will make to your operational plan, with ONE reason for each change. **(5)**

1.1.3 Use the REVISED intake. Compile a bin allocation plan for the harvest season for all commodities in storage. Answer in a table with these columns only: Compartment | Commodity | Tons | Reason **(15)**

1.1.4 Use the REVISED figures to complete the Operational Report in ANNEXURE A. Hand in Annexure A with your answer book. **(10)**

1.2 Client scenario

- Agri-Trade (Pty) Ltd is a grain trading company in Klerksdorp.
- It represents 25 producers who farm 4 200 ha.
- It wants priority storage, out-loading within 48 hours of an instruction, and competitive handling tariffs.
- It says it may move its business to a competing depot 35 km away.

- 1.2.1** Identify TWO opportunities to attract and keep this client. Answer in a table with these columns only: Opportunity | Practical action | How it will keep the client. **(10)**
- 1.2.2** Design ONE new product or service for this client. State (a) what it is, (b) how it benefits the client and (c) how the depot will implement it. **(5)**

SUB-TOTAL: 60

QUESTION 2

2.1 Job description: Fumigation Technician, Standerton Grain Depot, Mpumalanga

Department	Grain Quality and Storage
Reports to	Depot Manager
Purpose	To apply fumigation treatments to stored grain to prevent pest infestation.
Key duties	1. Apply fumigation chemicals as directed by the depot manager. 2. Monitor stored grain for pest activity. 3. Keep records of fumigation treatments. 4. Store fumigation chemicals safely. 5. Wear protective equipment when applying chemicals.
Requirements	1. Grade 12. 2. Experience in fumigation. 3. Able to read and write. 4. Willing to work in confined spaces.

- 2.1.1** Review the job description for its applicability and suitability. Identify FIVE aspects that are missing or not suitable for this role in a grain depot. Answer in a table with these columns only: Aspect | Reason. (5)

2.2 Critical Performance Indicators (CPI): Mr Sipho Ndlovu, Fumigation Technician

Review period: February – April 2025

No.	Performance indicator	Target	Actual
1	Fumigation treatment records completed	100% (20 of 20)	70% (14 of 20)
2	Weekly pest inspections (sieve test and temperature)	10 of 10	6 of 10
3	Full PPE worn during chemical application	100%	100%
4	Chemical stock reconciled monthly; no expired stock	3 of 3 months; 0 expired	2 of 3 months; 1 expired phosphine canister
5	Pest sightings reported to the manager within 24 hours	100% (4 of 4)	50% (2 reported after 72 hours)
6	Bins sealed and checked for gas leaks before fumigation	100% (20 of 20)	85% (17 of 20)

- 2.2.1** Interpret the CPI results. List the FIVE indicators that were not achieved and state the gap between target and actual for each. (5)
- 2.2.2** Compile an Individual Development Plan (IDP) for Mr Ndlovu for the TWO most serious shortfalls. Answer in a table with these columns only: Development need | Intervention | Responsible person | Target date | How progress will be measured. (10)

Further information

The IDP was implemented and Mr Ndlovu received two months of coaching. On 30 June 2025 an export client's auditor found live weevils in Compartment 3 (more than 5 insects per kg). The treatment log shows that Mr Ndlovu fumigated Compartment 3 on 10 June 2025, but there is no evidence that this was done: no used tablets, no sealing tape and no gas readings. An export order of 3 200 t is on hold. Falsifying records is a dismissible offence in the depot's disciplinary code.

- 2.2.3** Despite the interventions above, it has become necessary to discipline Mr Ndlovu. Describe how this will be done in terms of the Labour Relations Act (Act 66 of 1995) and Schedule 8: Code of Good Practice: Dismissal.

- a. List SIX steps of the process in the correct order, from investigation to outcome. (6)
- b. State TWO rights of the employee during the process. (2)
- c. State TWO possible sanctions. (2)

[10]

SUB-TOTAL: 30

QUESTION 3

3.1 Case study: Vryburg Grain Depot, North West Province – sunflower, 2024/2025 season

Table 3.1: Original crop estimate

Planted area	Expected yield	Total crop	Depot market share	Expected depot intake	Planned out-loading
9 500 ha	1.7 t/ha	16 150 t	55%	8 883 t	8 400 t

Table 3.2: Original operational budget

Budget item	Basis	Tons	Amount (R)
INCOME			
Handling fee (intake)	R30.00/t	8 883	266 490
Storage fee (3 months × R7.00)	R21.00/t	8 883	186 543
Out-loading fee	R19.00/t	8 400	159 600
Drying income (12% of intake)	R52.00/t	1 066	55 432
Administration income	Fixed	—	22 000
Total income			690 065
EXPENSES			
Staff (5 seasonal workers × 3 months)	Fixed	—	105 000
Electricity	Fixed	—	145 000
Fuel	Fixed	—	52 000
Maintenance and repairs	Fixed	—	78 000
Fumigation	R4.00/t stored	8 883	35 532
Grain insurance	R5.72/t stored	8 883	50 811
Administration and overheads	Fixed	—	45 000
Transport and logistics	Fixed	—	18 000
Total expenses			529 343
NET SURPLUS			160 722

Table 3.3: Change in conditions (February 2025)

- An aphid infestation and extreme heat reduced the expected yield from 1.7 t/ha to **1.36 t/ha**.
- Out-loading will drop in the same proportion as intake. Drying stays at 12% of intake.
- Insect residues were found in the empty bins. A pest control contractor must clean and fumigate the bins before intake. Once-off cost: **R18 500**.

Table 3.4: Affected stakeholders

Stakeholder	Type
Finance manager, head office	Financial / internal
Plant operations team	Operational / internal
Karoo Oil Processors (Pty) Ltd – oilseed crusher and client	Client / external

3.1.1 Analyse the change in the crop estimate and determine its impact on the original budget. Show all calculations.

- a. Calculate the revised depot intake and the revised out-loading. (4)

- b. Draw up the revised budget. Show ONLY the items that change, with these columns:

Budget item	Original (R)	Change (R)+or-	Revised (R)
<i>EXAMPLE</i>			
Total income	690 065		
Total expenses	529 343		

(9)

- c. Calculate the new net surplus or deficit and the change from the original. (3)
- d. State whether the position is better or worse, with a reason. Give ONE practical action to reduce the impact. (4)

[20]

- 3.1.2** Communicate the effect of the changes to ONE stakeholder in Table 3.4. Write a memorandum (internal stakeholder) OR a business letter or formal e-mail (external stakeholder) of not more than 150 words. State what changed and why, the impact, and at least ONE solution or next step. (10)

SUB-TOTAL: 30

QUESTION 4

4.1 Site inspection: Viljoenskroon Grain Depot, Free State Province

You are the depot manager. The depot is an 8-bin silo complex (32 000 t) handling yellow maize. It is peak intake season. You inspected the site on **18 March 2025**. The ambient temperature was about 30°C. Your findings are below.

Section A: Structures, equipment, electrical and environment

Ref	Area	Finding
F01	Intake pit walkway	A 900 × 600 mm grating panel has been removed. The gap drops 1.8 m onto the running intake conveyor. Workers cross the walkway. There is no barrier, tape or sign.
F02	Conveyor Belt 1	The emergency discharge gate is rusted and seized. Two workers with a pipe lever can move it only partly. Last maintenance entry, 14 months ago: "check next season".
F03	Sample room	The moisture meter, scale and lights run from two extension leads joined with insulation tape. The joint lies on a damp, dusty floor. There is no earth leakage protection.
F04	Truck yard	A leaking 200 L diesel drum stands on gravel, 4 m from the weighbridge office. There is a 600 mm diesel stain. There is no drip tray or bund, and no fire extinguisher within 10 m.

Section B: Facility care and neatness

Ref	Area	Finding
F05	Intake apron	Spilled maize, cobs and dust 80–120 mm deep cover 15 m ² . It has not been cleaned for 3 days. The bottom layer is fermenting. Truck tyres spread it across the yard.
F06	Conveyor gallery, east exit	A pallet of spare parts blocks the emergency exit door. The door opens only 150 mm. Workers are in the gallery.
F07	Maintenance workshop	Oily rags and open containers of used oil lie next to the bench grinder. Scrap metal is stacked in the walkway to the electrical substation door.

Section C: Stored grain quality

Ref	Bin	Observation
F08	Bin 1 3 900 t, received 17 March	Moisture: top 14.2%, middle 13.6%, bottom 12.1%. Maximum moisture for maize (Act 119 of 1990): 14.0%. Depot target for long-term storage: 12.5%.
F09	Bin 5	Temperature: top 36°C, middle 31°C, bottom 18°C. The middle layer rose by 8°C in the last 3 days.
F10	Bin 2 3 600 t, received 5 days ago	Accepted at 15.1% moisture (top layer). Strong musty smell at the hatch. In a probe sample from the top 500 mm, 8–10% of kernels have grey-green mould.

4.1.1 Refer to Section A (F01 – F04). Answer (a) and (b) in a table with these columns only:
Finding | Risk | Remedial action.

- For EACH finding, state the risk to workers or the facility. (4)
- For EACH finding, recommend ONE remedial action. (4)
- Which ONE of F01 – F04 requires work in that area to stop immediately? Give a reason. (2)

[10]

4.1.2 Refer to Section B (F05 – F07). Answer (a) to (c) in a table with these columns only: Finding | Problem | What can happen if not corrected | Remedial action.

- For EACH finding, state the problem. (3)
- For EACH finding, state what can happen if it is not corrected. (3)
- For EACH finding, recommend ONE remedial action. (3)
- Use Annexure C. How often must grain dust be removed from horizontal surfaces during the intake season? (1)

[10]

4.1.3 Refer to Section C (F08 – F10). Answer (a) to (c) in a table with these columns only: Finding | Quality risk | Likely cause | Immediate corrective action.

- For EACH finding, identify the quality risk. (3)
- For EACH finding, state the likely cause. (3)
- For EACH finding, recommend ONE immediate corrective action. (3)
- Which bin must be dealt with first? Give a reason. (1)

[10]

4.1.4 Compile a plan that prioritises ALL ten findings (F01 – F10) by urgency and importance. Do NOT repeat the remedial actions. Answer in a table with these columns only: Finding | Priority level | Responsible person | Target date | Reason for priority (40)

Priority levels: **IMMEDIATE** (within 24 hours) | **URGENT** (within 1 week) | **IMPORTANT** (within 1 month) | **SCHEDULED** (within 3 months)

4.2 Risk assessment

Read scenarios R01 to R07. **Not all scenarios are a risk.**

Ref	Area	Scenario
R01	Belt 2 drive pulley	An artisan removes the guard and checks the bearing with a screwdriver while the belt runs at full speed. There is no lockout. He says the belt must run so he can feel if the bearing is hot.
R02	Truck yard	A truck reverses towards the intake pit. There is no spotter and no wheel stop. An intake operator stands on the apron with his back to the truck, signing papers.
R03	Bin 7	Bin 7 is on day 2 of a 5-day phosphine fumigation. The warning sign is on the ladder only. The manager tells a worker without a gas mask to open the roof hatch and take a sample.
R04	Bin 6	Temperature: top 23°C, middle 21°C, bottom 18°C. Readings have been stable for 7 days. Aeration ran for 4 nights after intake.
R05	Bin 4 aeration fan	The artisan has locked out the fan isolator with his own padlock and is inspecting the impeller. A worker asks him to “quickly switch the fan on” to blow dust off the catwalk. The artisan hesitates.
R06	Belt 1 tail pulley	Before opening the guard, the artisan locks out the isolator with his own padlock, attaches a tag with his name, employee number and the date, and the supervisor signs the lockout register.
R07	Bucket elevator head (28 m), 22:30	Two artisans repair the drive belt using one portable light. Neither wears a harness. The safety chain at the platform edge is not clipped.

4.2.1 Use the Risk Assessment Tool in ANNEXURE B to assess ALL seven scenarios. Where a scenario is safe, write COMPLIANT in the last column and give the reason. Hand in Annexure B with your answer book. (35)

New information about R02

The depot has now: (1) installed a concrete wheel stop 3 m from the pit edge; (2) appointed a spotter with a radio for every reversing truck; (3) painted a safe standing zone for intake operators; and (4) started briefing every driver at the weighbridge.

4.2.2 Review the risk assessment for R02 using the new information and Annexure B.

- a. State the new likelihood and consequence ratings and calculate the new risk score. (3)
- b. State the new risk level. (2)
- c. Explain why the risk level changed and state whether further action is needed. (5)

[10]

4.3 Health and safety observations

Ref	Observation
O1	An intake operator works at the intake pit all morning without a hard hat. His hard hat lies on the control desk. He says it is too hot.
O2	The dust suppression system at transfer point T2 was switched off 4 days ago because the floor was "slippery". Maize dust 5–8 mm thick covers all surfaces around T2.
O3	The "DANGER – CONFINED SPACE" sign at the elevator boot pit entrance is covered by a stack of empty grain bags.
O4	A contractor is grinding a handrail in the conveyor gallery during intake. No hot work permit was issued. There is grain dust on the floor nearby.

- 4.3.1** Use the Health and Safety Policy in ANNEXURE C. For EACH observation (O1 – O4), answer in a table with these columns only: Observation | Section number and title | Violation | Policy requirement (clause number) | Immediate corrective action. **(20)**

SUB-TOTAL: 135

QUESTION 5

5.1 Sampling scenario: Bethal Grain Depot, Mpumalanga – April 2025

Soybeans are out-loaded by conveyor belt into a bulk truck. The sampler takes a sample from the moving grain stream. These are his steps:

Step	What the sampler did
1	Takes 20 samples from the stream: 14 in the first half of loading and 6 in the second half.
2	Takes each sample from the edge of the belt only.
3	Leaves the sample container open during a 4-minute rain shower.
4	Collects 11.5 kg of soybeans in total.
5	Mixes the sample and reduces it with a multiple slot divider.
6	Puts the working sample in an unmarked bag and takes it to the grading table.
7	Throws away the rest of the representative sample.

5.1.1 Identify the FIVE sampling controls that were not in place. For each, give the step number and the correct requirement. **(5)**

5.1.2 Compile a plan to address the five issues according to sampling standards and workplace procedures. Answer in a table with these columns only: Step number | Corrective action | Standard or procedure to apply | How to prevent it from happening again. **(15)**

5.2 Grading scenario: the same consignment

Step	What the grader did
1	Uses the 4.75 mm sieve without checking it against the specification.
2	Weighs the working sample on a calibrated scale.
3	Finds soft pods that have not split open. Counts them as normal soybeans, not as wet pods.
4	Puts foreign matter and sunflower seed in one container and weighs them together.
5	Removes and weighs stones, but does not check for sclerotia.
6	Records the moisture reading on the grading certificate.
7	Issues the grading certificate without signing it.

5.2.1 Identify the FIVE grading controls that were not in place. For each, state the error and the correct requirement. **(10)**

5.2.2 Compile a plan to address the five issues according to grading standards and workplace procedures. Answer in a table with these columns only: Step number | Corrective action | Standard or procedure to apply | How to prevent it from happening again. **(15)**

SUB-TOTAL: 45

TOTAL: 300 MARKS

ANNEXURE A: OPERATIONAL REPORT (Question 1.1.4)

Learner number: _____

Field	Information
Depot name	Lichtenburg Grain Depot
Reporting season	2024/2025 summer season (harvest April – June 2025)
Commodity	Yellow maize
Total silo capacity (t)	50 000
Market price (R/t)	R3 850 (SAFEX, May 2025)
Compiled by	Depot Manager
1. Revised total estimated crop (t)	
2. Revised expected depot intake (t)	
3. Current stock in storage (t)	
4. Planned out-loading before harvest (t)	
5. Stock remaining after out-loading (t)	
6. Capacity available for yellow maize (t)	
7. Storage surplus / (shortfall) for yellow maize (t)	
8. Number of compartments needed for yellow maize	
9. Expected handling and storage income (R)	
10. Special storage requirement (one line)	

Fields 1 – 10: 1 mark each.

(10)

ANNEXURE B: RISK ASSESSMENT TOOL (Questions 4.2.1 and 4.2.2)

Learner number: _____

Risk score = Likelihood (L) × Consequence (C)

Rating	Likelihood (L)	Consequence (C)
5	Almost certain	Catastrophic: death, permanent disability or structural collapse
4	Likely	Major: hospitalisation, or grain loss above R500 000
3	Possible	Moderate: medical treatment, or loss R50 000 – R500 000
2	Unlikely	Minor: first aid, or loss below R50 000
1	Rare	Negligible: no injury or financial impact

Risk score	Risk level	Required action
16 – 25	VERY HIGH	Stop the activity immediately. Act before work resumes.
10 – 15	HIGH	Act within 24 hours. Notify senior management.
5 – 9	MEDIUM	Act within 1 week. Assign a responsible person.
1 – 4	LOW	Monitor. Schedule corrective action.

Risk Assessment Table (Question 4.2.1)

Ref	Hazard and person at risk	L	C	Score	Risk level	Additional controls (or COMPLIANT + reason)
R01						
R02						
R03						
R04						
R05						
R06						
R07						

ANNEXURE C: HEALTH AND SAFETY POLICY (Questions 4.1.2 and 4.3.1)

*Grain storage facility – issued in terms of the Occupational Health and Safety Act (Act 85 of 1993).
Applies to all employees, contractors and visitors.*

Section 1: Personal protective equipment (PPE)

- 1.1 Intake pit and truck yard: hard hat, P2 dust mask, safety boots and reflective vest at all times.
- 1.2 Conveyor gallery: as in 1.1, plus hearing protection where noise is above 85 dB(A).
- 1.3 Work above 2 m: fall-arrest harness attached to a certified anchor point.
- 1.4 Fumigant handling: chemical-resistant gloves, overalls and respiratory protection approved for phosphine.

Section 2: Safety signs and demarcation

- 2.1 Safety signs must be legible, correctly placed and never covered or blocked.
- 2.2 Emergency exit signs must be visible and lit.
- 2.3 Any hazard must be barricaded or taped off immediately.
- 2.4 Confined space entrances must show a "DANGER – CONFINED SPACE" sign at all times.

Section 3: Grain dust

- 3.1 Grain dust must be removed from horizontal surfaces at least daily during the intake season.
- 3.2 Spillage at transfer points must be cleaned within 24 hours.
- 3.3 Dust suppression and extraction systems must be kept working. They may not be switched off without the depot manager's approval.
- 3.4 Workers in dusty areas must wear at least a P2 dust mask.

Section 4: Emergency procedures

- 4.1 Escape routes must be marked and kept clear at all times.
- 4.2 Emergency exit doors must be unlocked during working hours and open outward.
- 4.3 Evacuation drills must be held at least twice a year and recorded.

Section 5: Chemicals and fumigation (SANS 10206)

- 5.1 Pesticides and fumigants must be kept in a locked, ventilated chemical store.
- 5.2 Gas concentration readings must be recorded for every fumigation.
- 5.3 Fumigation warning signs must stay on all bin hatches and access points until the bin is declared gas-free.
- 5.4 An exclusion zone must be set up and workers moved out before fumigation starts.

Section 6: Working at heights

- 6.1 Anyone working above 2 m must wear an approved fall-arrest harness.
- 6.2 The harness must be attached to a certified anchor point at all times.
- 6.3 Bin roofs are work-at-height areas.

Section 7: Machine guarding, lockout and hot work

- 7.1 Guards must be in place on all moving parts during operation.
- 7.2 Before maintenance, the worker must apply a personal padlock to the main isolator.
- 7.3 A lockout tag with the worker's name, employee number and date must be attached.
- 7.4 A verbal instruction is not a lockout. The padlock is compulsory.
- 7.5 A written hot work permit must be issued before any welding, grinding or cutting.

Section 8: Housekeeping

- 8.1 The depot must be kept clean and orderly.
- 8.2 Walkways and exits must be kept clear of all materials.
- 8.3 Empty bins must be cleaned and fumigated before new-season grain is loaded.

Section 9: Incident reporting

- 9.1 Incidents must be reported to the supervisor or depot manager immediately.
- 9.2 An incident report must be submitted within 24 hours.
- 9.3 Quality or safety issues with contract implications must be escalated to the depot manager immediately.

Section 10: Confined spaces

- 10.1 No entry without a signed confined space entry permit.
- 10.2 A trained standby person must be at the entrance for the whole entry.
- 10.3 The atmosphere must be tested before entry.

– END OF QUESTION PAPER –