

END TERM 3 2026

GRADE 10

AVIATION

MARKING SCHEME & TEACHER'S GUIDE

TOTAL: 80 MARKS

This marking scheme is aligned to the Grade 10 Aviation Curriculum Design, with emphasis on the Flight Operations and Airport Operations content represented in the final part of the design. Award equivalent technically correct responses where appropriate.

CURRICULUM TRACEABILITY

Question	Sub-strand	Learning outcome focus	Cognitive level	Marks
1	3.1 Aviation Weather	Explain elements of weather in the atmosphere	Remember/Understand	4
2	3.1 Aviation Weather	Describe effects of weather on an aircraft	Understand/Apply	4
3	3.1 Aviation Weather	Analyse types of clouds	Analyse	6
4	3.1 Aviation Weather	Measure/apply weather knowledge to flight operations	Apply/Analyse	4
5	3.1 Aviation Weather	Appreciate role of aviation weather	Understand	2
6–9	3.2 Aviation Communication	ICAO phonetics; standard words/phrases; transmission; marshalling/safety communication	Understand/Apply	20
10–13	3.3 Aerodynamics of Flight	Atmosphere, axes, forces and science concepts of flight	Understand/Apply/Analyse	20
14–19	4.1–4.2 Airport / Airport Business Services	Airport categories/layout, roads, business services, financial concepts and consumer rights	Remember/Apply/Analyse	20

MARKING GUIDE

QUESTION 1 — 4 MARKS

Award 1 mark each for any four: wind; temperature; pressure; humidity; precipitation; clouds; visibility (or another weather element supported by the curriculum).

QUESTION 2 — 4 MARKS

Any four explained effects, 1 mark each: strong winds can affect aircraft control/ground operations; temperature affects aircraft performance; pressure affects flight/altitude considerations; high humidity can affect atmospheric conditions/visibility; precipitation can reduce visibility and affect surfaces; adverse cloud conditions can affect flight operations; poor visibility increases operational risk. Accept equivalent correct explanations.

QUESTION 3 — 6 MARKS

Award 2 marks for each cloud type when both a reasonable appearance/altitude description and correct distinction are given.

Cirrus: thin, wispy/high-level clouds — 2 marks. Stratus: layered/sheet-like clouds at low levels — 2 marks. Cumulus: heap/puffy clouds with vertical development, generally lower to middle levels — 2 marks. Accept scientifically appropriate equivalent descriptions.

QUESTION 4 — 4 MARKS

Any two concerns, 2 marks each when linked to the stated conditions: strong winds; high humidity; heavy precipitation; reduced visibility. Award 1 mark for identifying the concern and 1 for an appropriate operational implication.

QUESTION 5 — 2 MARKS

Any two: supports flight planning; assists safe decision-making; helps anticipate hazardous conditions; supports monitoring of conditions during flight operations. 1 mark each.

QUESTION 6 — 4 MARKS

Any four: reduce ambiguity; promote standardisation; improve clarity; reduce misunderstanding; support safe transmission of information; facilitate consistent communication between aviation personnel. 1 mark each.

QUESTION 7 — 8 MARKS

(a) Ground-to-ground: communication between personnel/stations on the ground — 2 marks. (b) Ground-to-air: communication between ground personnel/stations and aircraft — 2 marks. (c) Read back: repeating received information/instructions to confirm accurate reception — 2 marks. (d) Transmission: sending a communication message using the communication system/radio — 2 marks.

QUESTION 8 — 4 MARKS

Any four: clarity; brevity/conciseness; correct standard terminology/phrases; accurate listening and response; correct pronunciation; appropriate radio procedure; confirmation/read-back where required. 1 mark each.

QUESTION 9 — 4 MARKS

Award 2 marks each for any two well-developed contributions: prevents misunderstanding; coordinates movement; reduces collision/incursion risk; ensures ground personnel know aircraft intentions; supports timely response to hazards/emergencies. 2 marks per explained point.

QUESTION 10 — 4 MARKS

(a) Troposphere — 1 mark; stratosphere — 1 mark. (b) Any one relevant characteristic of each: troposphere contains most weather phenomena/temperature generally decreases with altitude — 1 mark; stratosphere is above the troposphere and is more stable/contains ozone layer — 1 mark. Accept curriculum-consistent alternatives.

QUESTION 11 — 6 MARKS

Longitudinal axis — 1 mark; roll — 1 mark. Lateral axis — 1 mark; pitch — 1 mark. Vertical axis — 1 mark; yaw — 1 mark. Do not penalise equivalent wording if the axis-motion relationship is correct.

QUESTION 12 — 6 MARKS

Lift — 1 mark + correct role 0.5; weight — 1 mark + role 0.5; thrust — 1 mark + role 0.5; drag — 1 mark + role 0.5. Total 6 marks. Roles: lift acts upward/perpendicular to relative airflow; weight acts downward due to gravity; thrust propels aircraft forward; drag opposes motion through the air.

QUESTION 13 — 4 MARKS

Bernoulli: pressure differences associated with airflow contribute to lift — 2 marks. Newton's laws: changes in momentum/reaction forces contribute to aircraft motion and aerodynamic force generation — 2 marks. Accept appropriate Grade 10 explanations linking the principles to flight.

QUESTION 14 — 6 MARKS

Award 1 mark each for any three categories stated in the Curriculum Design: B, C and D. Award 1 mark for an appropriate characteristic/use for each category. Maximum 6 marks. Accept the category descriptions as taught by the institution where they are curriculum-consistent.

QUESTION 15 — 6 MARKS

(a) Runway — 1; taxiway — 1; apron — 1; terminal — 1. (b) Any two correct functions, 1 mark each: runway used for aircraft take-off/landing; taxiway provides aircraft movement between runway/apron; apron supports aircraft parking/loading/unloading/servicing; terminal supports passenger/service activities. Total 6.

QUESTION 16 — 4 MARKS

Runway: aircraft take-off/landing — 1. Taxiway: aircraft movement between runway and other operational areas — 1. Service road: movement of service/support vehicles within airport operations — 1. Access road: provides access to airport facilities/areas — 1.

QUESTION 17 — 4 MARKS

Any four: right to quality/service; right to information; right to fair/appropriate pricing; right to health and safety; right to compensation/redress; another consumer right correctly explained in the airport context. 1 mark each.

QUESTION 18 — 4 MARKS

Profit = revenue – expenses = KSh 480,000 – KSh 350,000 = KSh 130,000 — 2 marks (method + correct answer).

Importance of records: any two, 1 mark each: tracks income/expenses; supports budgeting; assists decision-making; supports accountability/tax/compliance; shows profitability.

QUESTION 19 — 4 MARKS

Aviation business roles: any two explained, 1 mark each — e.g. providing airport-related services, generating employment/revenue, supporting passenger/cargo operations, providing specialised aviation services. Consumer protection: any two explained, 1 mark each — protects consumer rights, handles complaints/redress, promotes safety/quality/information, supports fair treatment. Maximum 4.

MARKING CODES

M = Method/Formula mark; A = Accuracy/Correct Answer mark; C = Concept/Curriculum point mark. For open responses, award C marks for distinct valid curriculum points and avoid double-awarding the same idea.

TEACHER / EXAMINER GUIDANCE

Award equivalent technically correct answers even when wording differs from the scheme.

Do not award two marks for the same idea expressed in different words.

For explanations, the response should contain both the relevant concept and a meaningful explanation where the question requires one.

For calculations, award method where the correct process is shown even if an arithmetic error affects the final answer, provided the method is otherwise valid.

For diagrams, award labels only where the indicated axis/feature is correctly identified.

The question paper total and this marking scheme total are both 80 marks.

END OF MARKING SCHEME

