



Hang Gliding

C-LICENCE THEORY TEST

Pilot's Name (Capitals):

Club:

Examiner's Name:

Instructor's License No:

Date Written:

Date Marked:

MARKS

A	B	C	D	E	F	
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15	29	9	10	61	34	153

Pass Mark = 85%

NOTES:

Give answers on own paper. Write legibly.

Use sketches where necessary.

Multiple choice questions – there can be more than one answer - you may motivate your answer.

Part A

General

Question 1:

Use a diagram to illustrate the structure of operation of SAHPA from Pilot up to Government level. Make reference to the FAI. (6)

Question 2:

Describe what you get from SAHPA. (5)

Question 3:

You encounter a local pilot at a site where he / she intends to fly and whom you know not to be a member of SAHPA. Your duties are as follows:

- a) Report him / her to the local L & S O
- b) Ask for another pilot to be a witness.
- c) Approach the pilot in a courteous manner and insist upon his / her affiliating, explaining the reasons.
- d) All of the above (1)

Question 4:

You encounter a foreign pilot at a local site where he / she intends to fly. Your duties are as follows:

- a) Check the pilots foreign license and logbook, and if it is sufficient, let him / her launch
- b) Check the pilot's foreign public liability insurance and license, and if it is valid and suitable for the site, let him / her launch, but take the pilots contact details and insist on his / her taking out foreign SAHPA membership, which is free if the insurance is valid here.
- c) Check the pilot's foreign public liability insurance and license, and if the insurance is not valid here, do not allow him her to launch and insist on his / her taking out temporary SAHPA membership.
- d) Refer the pilot to an Instructor or S&TO who can do a skill assessment and issue the pilot with a foreign membership license before flying. (1)

Question 5:

A pilot whose abilities you do not know approaches you for a sign off. Your duties are as follows:

- a) You do not provide the sign off
- b) You check his logbook, and if his experience seems reasonable, you provide the sign off.
- c) You check his logbook, and if his experience seems reasonable, and the conditions suitable, you provide the sign off, after explaining any particular hazards of the site or the conditions
- d) Provide the sign off only if he undertakes to retrieve you. (1)

Question 6:

A pilot whose abilities you do know approaches you for a sign off. Your duties are as follows:

- a) You do not provide the sign off
- b) You check his logbook, and if his experience seems reasonable, you provide the sign off.
- c) You check his logbook, and if his experience seems reasonable, and the conditions suitable, you provide the sign off, after explaining any particular hazards of the site or the conditions
- d) Provide the sign off only if he undertakes to retrieve you. (1)

Sub Total: 15

Part B

Air Law

Question 7:

Under what part of the Civil Aviation Air Law does hang gliding operate? (1)

Question 8:

Which one is true:

You can fly a hang glider in South Africa if:

- a) You are a member of SAHPA and have a valid HG license from any recognized flying organization
b) You have a valid HG license from any recognized flying organization that is recognized by SAHPA (1)

Question 9:

What is the minimum distance allowed from clouds when flying under VFR? (2)

Question 10:

When flying around sunset, what is the latest you may remain in the air? (1)

Question 11:

What is the semi-circular rule and why do you think you as a hang glider pilot should be aware of it? (4)

Question 12:

When can you fly above clouds? (2)

Question 13:

You have flown XC and arrived at an unmanned airfield. Briefly explain circuit joining procedure as a hang glider. (4)

Question 14:

What is the maximum height permissible to fly VFR? (1)

Question 15:

When are you allowed to fly in controlled airspace? (4)

Question 16:

What is the Following Line Rule and why should you be aware of it? (3)

Question 17:

What do the following **abbreviations** stand for, and give a brief description of each:
VMC: - QNE: - AGL: - FL: - UTC: - CTR: - (6)

Sub Total: 29

Part C **Flying skills**

Question 18:

You are about to embark on a cross-country flight over extended forested areas. Other than your normal flying gear, which extra item would you choose to take with you,

- a) Space blanket.
b) Map of area.
c) Roll of dental floss.
d) Axe. (1)

Question 19:

When can you safely fly into the lee-side of a mountain looking for a lee-side thermal?

- a) When the wind is light, there are safe landing areas on the lee and the mountain is sufficiently large.
b) If the wind is light and the mountain is at least 2000ft steep sloping and facing the sun.
c) If the wind is light and it is an accepted area for lee-side flying.
d) Never. (1)

Question 20:

What factors would you consider before flying into the lee of a mountain looking for a thermal?

- a) The strength of the wind, the type of glider and your flying experience.
b) The wind direction, the size and vertical height of the mountain and easy escape routes.
c) The angle of the sun, the shape of the upwind slope and lee of the mountain and landing areas.

d) A, b and c.

(1)

Question 21:

You have just been sucked into a thundercloud and have a GPS and/or compass with you. What would you do to escape the lift and cloud?

- a) Fly slowly and follow a heading to the nearest side of the cloud.
- b) Fly as fast as possible, following a heading for the nearest side of the cloud.
- c) Through your chute.
- d) Stand on the base bar and hold the nose wires.

(1)

Question 22:

You have been unsuccessful of escaping the cloud suck and are in danger of freezing and hypoxia. As a last resort what do you do?

- a) Unclip, fall free of the glider and through your chute.
- b) Unclip, free-fall until clear of the cloud then through your chute.
- c) Do wing-overs until the glider falls free of the cloud, if the glider breaks up then through your chute.
- d) Stand on the base bar hold the nose wires until the glider dives free of the cloud, if the glider breaks, throw your chute once clear of the cloud.

(1)

Question 23:

You are flying into a head wind of 10 km/h in a high performance topless hang glider. The average sink of the air is 100ft/min. What is the minimum strength of thermal that you would use to enable progress into wind?

- a) 100ft/min
- b) 200ft/min
- c) 300ft/min
- d) 400ft/min

(1)

Question 24:

You are flying into a 30 km/h head wind in a high performance topless hang glider. The average sink of the air is 100ft/min. What is the minimum thermal strength you need to enable progress into the headwind?

- a) 100ft/min
- b) 200ft/min
- c) 300ft/min
- d) 400ft/min.

(1)

Question 25:

What is the correct procedure for claiming official records?

- a) Always have a take off and landing witness and fly with a barograph.
- b) Always have at least one witness and follow the rules as laid down by the FAI.
- c) Always have at least one witness and follow the rules as laid down by SAHPA
- d) Have enough witnesses so it is impossible to cheat and claim the record from SAHPA.

(1)

Question 26:

At what speed will you fly to get maximum glide when gliding down wind?

- a) Fly at best glide speed
- b) Fly at minimum sink speed
- c) Fly at just above stall speed to float more
- d) Fly between best glide and minimum sink speed.

(1)

Sub total: 9

Part D

Medical aspects of flying

Question 27:

What are the hazards of high altitude flying?

- a) Disorientation, severe cold and low oxygen.
- b) Severe cold, low oxygen and straining glider.
- c) Low oxygen, equipment stress, disorientation and severe cold.
- d) Equipment stress, low oxygen and severe cold.

(1)

Question 28:

What is the biggest dangers of flying in dessert or semi desert areas?

- a) Dehydration.
- b) Getting lost.
- c) Hypoxia.
- d) Sun stroke.

(1)

Question 29:

At what altitude can you expect hypoxia to set in?

- a) 10 000ftASL
- b) 12 000ft ASL
- c) 14 000ft ASL
- d) 16 000ft ASL

(1)

Question 30:

What are the symptoms of hypoxia?

- a) Drowsiness, lassitude, mental and muscle fatigue and headaches.
- b) Sometimes headache, occasionally nausea and euphoria, mental and muscle fatigue and drowsiness.
- c) Sometimes euphoria, headache, muscle and mental fatigue, lassitude, occasional nausea and drowsiness.
- d) Headache, drowsiness, mental and muscle fatigue, itchy extremities, and extreme tiredness.

(1)

Question 31:

When breathing air, at what altitude can the unclimatised person expect to lose consciousness?

- a) 15 000ft ASL
- b) 18 000ft ASL
- c) 20 000ft ASL
- d) 23 000ft ASL

(1)

Question 32:

What level of mental proficiency can you expect after spending one hour at 15 000ft breathing air?

- a) 100%
- b) 80%
- c) 70%
- d) 50%

(1)

Question 33:

What are the symptoms of hypothermia?

- a) Shivering and muscle fatigue.
- b) Blue extremities and drowsiness.
- c) Shivering, blue lips, drowsiness.
- d) Drowsiness, mental and muscle fatigue.

(1)

Question 34:

If you have to fly after SCUBA diving, what is the maximum permissible height recommended after SCUBA diving?

(1)

Question 35:

From a medical point of view when would you not fly your hang glider?

(2)

Sub Total: 10

- Question 36:**
Explain Relative humidity. (3)
- Question 37:**
Define wind shear. (3)
- Question 38:**
What is measured with a radiosonde? (3)
- Question 39:**
Describe the difference between:
a) SALR
b) DALR
c) ELR (3)
- Question 40:**
Explain the common simplified calculation used by many soaring pilots to calculate approximate cloud base height for the day. (3)
- Question 41:**
How does cloud development affect stability? Use a T-H diagram to illustrate your explanation. (6)
- Question 42:**
Explain:
d) Absolute instability
e) Neutral stability
f) Conditional stability
g) Absolute stability (8)
- Question 43:**
Why does a CB cell always have an anvil top? (2)
- Question 44:**
Illustrate and explain the difference between a multi cell CB and a supercell CB? (8)
- Question 45:**
What are micro bursts? (4)
- Question 46:**
Where can you expect tornadoes in South Africa? (2)
- Question 47:**
Describe two types of “foehn” effects and where in South Africa do we get similar effects? (6)
- Question 48:**
Draw a wind profile of a classic and commonly occurring katabatic wind flow. (4)
- Question 49:**
Give at least two examples of katabatic wind patterns in South Africa. (4)
- Question 50:**
What is a pileus cloud? (2)

Sub Total: 61

PART F
AERO DYNAMICS AND GLIDER DESIGN.

Question 51:

- a) Describe the various kinds of drag on a hang glider.
- b) Using a graph illustrate these drag types and add the total drag curve (8)

Question 52:

Find the best glide speed of a hang glider by means of an appropriate graph. (2)

Question 53:

What is the inherent problem of an airfoil shape? Also illustrate your answer. (6)

Question 54:

How does a hang glider wing compensate for this? (6)

Question 55:

Describe and illustrate why a hang glider moves forward in flight with reference to acceleration when pulling in. (6)

Question 56:

What systems does a topless wing use to achieve pitch stability? (4)

Question 57:

At what angle of attack is it commonly known that a stall occurs? (1)

Question 58:

Why does it seem that a hang glider wing stalls at a much higher angle of attack? (3)

Sub Total: 34