

**THE BRITISH GLIDING ASSOCIATION**  
*BRONZE CERTIFICATE CONFUSER.*

ISSUED JANUARY 1998.

**DO NOT WRITE ON THIS BOOKLET.**

**ANSWERS**

NAVIGATION PART 2 REQUIRES YOU TO BE IN POSSESSION OF A  
MARKER PEN, RULER AND PROTRACTOR, AND ONE OF THE FOLLOWING  
CURRENT 1:500 000 SCALE ICAO CHARTS

*SOUTHERN ENGLAND AND WALES.*

*NORTHERN ENGLAND AND IRELAND.*

*SCOTLAND, SHETLAND AND ORKNEY.*

**DO NOT WRITE ON THIS BOOKLET.**

**AIR LAW AND BGA OPERATIONAL REGULATIONS.**

QUESTION 1. What are the minimum requirements for flying in cloud in gliders?

- A. The occupants must wear a serviceable parachute and have been instructed in its use.**

QUESTION 2. What are the restrictions imposed on gliders flying within a MATZ. ( Military Air Traffic Zone )?

- C. None, so long as the ATZ is not penetrated.**

QUESTION 3. You are approaching a strange airfield and receive red flashes from the ground, what should be your actions?

- C. Do not land as the airfield is not available for landing.**

QUESTION 4. Under what circumstances is a weak link not required in the winch / auto tow cable?

- B. The proven breaking strain of the launch cable is lower than that of the weak link strength required by the glider manufacturer.**

QUESTION 5. What are your actions if you suspect any defect or damage to a glider?

- B. Report it to the duty instructor before the next flight.**

QUESTION 6. What are the VMC rules when flying in class D airspace below 3000ft AMSL at 140 kts or less?

- D. Clear of cloud and in sight of the surface with an in flight visibility of more than 5 Km.**

QUESTION 7. When aerotowing, the tug rocks its wings laterally. What does this mean?

- B. Release immediately.**

QUESTION 8. When two aircraft are approaching head on, each shall alter its course in which direction?

- D. To the right.**

QUESTION 9. When two aircraft are converging at approximately the same height, who has the right of way?

- D. The aircraft which has the other on its right shall give way.**

QUESTION 10. Who has command of a tug / glider combination?

- A. The tug pilot.**

QUESTION 11. A glider shall not fly over any congested area below a height which would enable it to land clear of the area, or below 1500ft above the highest fixed object within 2000ft., whichever is the higher. Nor shall it fly over or within 3000ft of any open air assembly of more than 1000 persons ( without specific CAA permission). When is there an exemption to the 1500 foot rule?

**B. During normal take-off and landing and for life saving.**

QUESTION 12. Which of the following statements is most correct?

**A. Gliders shall give way to airships and balloons.**

QUESTION 13. Above what height should oxygen equipment be carried and what height is recommended for its use?

**B 12,000 ft amsl and use above 10,000 ft amsl.**

QUESTION 14. What must all glider pilots carry on flights over 5 nautical miles from their gliding site?

**B. Map(s) marked clearly with the controlled and regulated airspace.**

QUESTION 15. Any accident resulting in death, serious injury or substantial damage to an aircraft must be reported to whom?

**D. The Police and the Department of Transport AAIB.**

QUESTION 16. What is the maximum launch height allowed by the winch method without written permission from the CAA?

**C. 60 metres.**

QUESTION 17. A glider is defined as being in flight during what period?

**C. From when it first moves to take-off until it comes to rest after landing.**

QUESTION 18. A continuous green light to an aircraft in flight means what?

**B. You may land.**

QUESTION 19. Which of the following is not recommended for flight?

**D. All of the above.**

QUESTION 20. What are the dimensions of an air traffic zone at an airfield where the longest runway is greater than 1850 metres?

**A. 2000 feet above the airfield and 5 miles in diameter centred on the mid point of the longest runway.**

QUESTION 21. An area on a 1:500,000 scale ICAO chart is annotated as being a Restricted area. What does this mean with regards to a glider in flight?

- B. Flight within the published dimensions of the area must comply with the specified restrictions.**

QUESTION 22. When landing close behind other aircraft, and in particular power aircraft, what should be your actions?

- D. Land clear to their right.**

QUESTION 23. Whilst approaching an airfield you notice a red flare fired from the control tower. What should your actions be?

- B. Do not land, wait for permission.**

QUESTION 24. What are the signal requirements from a glider pilot who is unable to release from the aerotow?

- A. Fly out to the left and rock his wings.**

QUESTION 25. If a solo glider pilot does not hold a CAA or equivalent medical or a current driving licence, what are the 'declaration of health' requirements?

- A. Before first flying solo and on 50th, 60th and 65th birthdays.**

QUESTION 26. What does a white dumbbell displayed in the signal square signify?

- B. Movements of aircraft on the ground are confined to paved surfaces.**

QUESTION 27. Which statement is incorrect? You shall not fly -

- C. Below a height of 2000 ft above any congested area of a city, town or settlement.**

QUESTION 28. Your cross country route takes a line through East Midlands CTA. What must be your actions during the flight?

- C. Call the ATC unit to inform them of your presence. You must hold a CAA RT license.**

QUESTION 29. What is the tug pilot signalling when you see the rudder wagging whilst on tow?

- A. Check your air brakes are not open or drag chute deployed and close or jettison as necessary.**

QUESTION 30. Other than persons by parachute in an emergency, which is most correct statement with reference to items permitted to be dropped from a glider in flight?

- D. Ballast in the form of fine sand or water.**

QUESTION 31. What are the VMC minima required for gliders crossing airways?

- A. Gliders are not allowed to cross airways at all except by local agreement.**

QUESTION 32. An area on a 1:500,000 scale ICAO chart is annotated as being a Prohibited area. What does this mean with regards to gliders in flight?

- B. Flight within the published dimensions of the area is prohibited.**

QUESTION 33. What are the requirements to fly a newly rigged club aircraft?

- D. You must be authorised by the CFI or deputy for that purpose.**

QUESTION 34. What are the hours of day light (determined on the ground ) as defined for flying purposes?

- B. 30 minutes before sunrise until 30 minutes after sunset.**

QUESTION 35. What are the requirements for keeping an accurate and up to date personal flying log book?

- A. All pilots up to silver C and all instructors to prove their renewal requirements have been met.**



QUESTION 36. Whilst hill soaring which of the following statements is always true?

- B. A glider wishing to overtake another should pass between it and the hill.**

QUESTION 37. Who has the right of way when two aircraft are landing together?

- B. The lower aircraft. ( unless the other is obviously in distress ).**

QUESTION 38. What does a red and yellow striped arrow in the signal square of an airfield indicate?

- D. The direction of circuit in use.**

QUESTION 39. You are joining below a glider in a thermal. What are your actions?

- C. Turn in the same direction.**

QUESTION 40. Whilst planning a cross country flight you notice by reference to Notams that a purple airway has been established along your intended route during the period 1300 to 1500 Hrs. What should your actions be?

- B. Change your route to remain clear of the airway during the notified period.**

QUESTION 41. An area on a 1:500,000 scale ICAO chart is annotated as being a Danger area. What does this mean with regards to a glider in flight?

- B. Flight within the published dimensions may encounter activities dangerous to the glider or its occupants.**

QUESTION 42. What does a double white cross ( ++ ) showing on a runway indicate?

- C. An area that shall only be used for the take off and landing of gliders.**

QUESTION 43. What are the knock-on effects of a glider pilot's driving licence being revoked on medical grounds?

- C. The pilot becomes unfit to fly gliders solo.**

QUESTION 44. What does a white 'T' in the signal square of an airfield denote?

- A. Aircraft landing and taking off will do so in a direction parallel with the shaft of the 'T' and towards the cross arm.**

QUESTION 45. All BGA gliders must carry their approved identification markings. What are the requirements?

- C. Displayed on each side of the fin and rudder or on the fuselage in a substantially vertical plane. As large as practicable.**

QUESTION 46. Nose of tug to tail of glider, what is the maximum length of a tug / glider combination?

**B. 150 metres in total.**

QUESTION 47. What is the minimum number of aerotows required by the tug pilot and glider pilot combined before launching may take place?

**C. 6.**

QUESTION 48. What is the minimum equipment required in a glider used for aerobatic flying?

**D. A serviceable G meter.**

QUESTION 49. What is the minimum age required before flying a glider solo in the United Kingdom?

**A. 16 years.**

QUESTION 50. The captain of any aircraft must satisfy himself that the intended flight can be made safely. In order to achieve this, it is an operational requirement that all gliding clubs provide what facilities?

**A. Navigational information concerning temporary hazards and permanent changes.**

QUESTION 51. Certain areas of class 'B' airspace have been annotated as 'Gliding areas'. The controlling Air Traffic agency requires a request to utilise the areas prior to gliders flying in this airspace. What are the time periods required for notification by telephone to the Air Traffic agency?

- B. Twenty four hours before intended use and two hours prior to launch.**

QUESTION 52. What are the rules for glider flights between FL 245 and FL 660?

- B. Only allowed in certain designated areas (windows) with prior permission.**

## **AIRMANSHIP**

QUESTION 1. You have just landed your glider heavily. What are the correct actions?

- B. Inform the duty instructor before the aircraft flies again.**

QUESTION 2. What will happen to the eyes when a pilot is operating at altitude or above cloud with an empty field of view?

- D. They will tend to focus at a point 1 to 2 metres away.**

QUESTION 3. What will happen to the pilot who accepts a seating position that is too low in the cockpit?

- A. They will lose from view a part of the approach area under the nose of the glider.**

QUESTION 4. On arrival at a strange airfield, you call on the notified frequency but get no reply. Your radio is serviceable, what should your actions be?

- C. Continue with intended landing, watch for other traffic and follow suit, make relevant 'blind calls' on the radio.**

QUESTION 5. What are the correct actions on joining a thermal?

- A. Turn the same direction as other gliders and keep a good lookout.**

QUESTION 6. While ridge soaring with the hill on your right, you have to overtake another glider. What should your actions be?

**B. Overtake on the right.**

QUESTION 7. While watching a glider about to launch with a senior instructor on board, you notice the air brakes are open. What should you do?

**C. Stop the launch and bring it to the attention of the duty instructor.**

QUESTION 8. You have flown every week-end for six months but missed the last four weekends. What should your actions be?

**B. Ask for a check flight or discuss your situation with the duty instructor.**

QUESTION 9. You notice on the daily inspection that the radio keeps blowing fuses. What should you do?

**C. Get a qualified person to check the radio or clearly mark the radio 'u/s'.**

QUESTION 10. A glider on a head on collision course with a military aircraft could have a very high closing speed. In such a situation, how would the image of the military aircraft appear to grow in size with decreasing range?

**C. Initial growth would be small until close to impact where growth would become rapid.**

QUESTION 11. As the winch cable is being attached you notice that the weak link is damaged. What should you do?

**B. Have the suspect item changed before launching.**

QUESTION 12. You are commencing a launch on the winch when you notice a glider turning in early to land up the field. Is this a problem?

**D. Yes, if you have a launch failure you may have conflicting approaches.**

QUESTION 13. You are converting to a new type. There is a cross wind and you are about to aerotow on the belly hook using an unusually short aerotow rope. What should you do?

**C. Refuse the launch as it is getting dangerous to continue under the circumstances.**

QUESTION 14. A glider and a military aircraft could have a closing speed of 600 kts. If the visibility is 5 miles, but the pilots only see each other at 3 miles, how much time would the pilots have to avoid collision?

**A. About 20 seconds.**

QUESTION 15. You are breathing abnormally and showing symptoms similar to hypoxia at a low altitude where hypoxia would not be a consideration. What are you likely to be suffering from?

**D. Hyperventilation.**

QUESTION 16. There are certain vital actions to be taken in the event of a launch failure. Which of the following is the most correct statement?

- B. Adopt a nose down attitude, regain a safe flying speed, release what is left of the cable and land according to your 'Eventualities' brief if possible.**

QUESTION 17. On visiting a hill site, you read on the notice board a club rule stating a minimum height to leave the hill and return to site. Who does this apply to?

- A. All pilots, regardless of experience and ability.**

QUESTION 18. You are wire launching when you notice the parachute opening. What should be your immediate actions?

- C. Treat the situation as a launch failure and take the appropriate actions.**

QUESTION 19. Whilst flying downwind with a higher performance glider in front, and at about the same height as yourself, you notice he appears to be extending downwind further than you would like. What action should you take?

- D. Turn in early and be prepared to land up the field if necessary in order to avoid a potential conflict.**

QUESTION 20. After getting low on a cross country and choosing a field, you notice there is a stream along one side of it. What might this signify?

- A. The field slopes down towards the stream.**



QUESTION 21. Who is responsible for stopping a launch should anything be going wrong?

**C. Anybody.**

QUESTION 22. After Scuba diving, the guide lines are 'do not fly within 12 hours of swimming using compressed air and avoid flying for 24 hours if a depth of 30 feet has been exceeded'. Which risk is being kept to a minimum?

**C. Decompression sickness.**

QUESTION 23. What is the function of the eustachian tube?

**B. To allow the middle ear to equalize with ambient pressure.**

QUESTION 24. You are P2, flying mutually with a more experienced pilot who you consider has chosen an incorrect course of action which may endanger the glider. What should your actions be?

**D. Always express any doubts that you may have.**

QUESTION 25. On a cross country flight in August you are faced with an out landing. Assuming no obstructions and fields of adequate size, which of the following would be the correct choice?

**D. A stubble field that has a border ploughed around it.**

QUESTION 26. In which direction should all turns be made when hill soaring?

**A. Away from the hill.**

QUESTION 27. You are about to land out. Which of the following is the best option, when the only suitable field has a slope in it, and the wind is up the slope?

**C. Land up hill, down wind.**

QUESTION 28. You are on aerotow when you notice the rudder of the tug wagging from side to side. What should your actions be?

**A. Check air brakes are closed and jettison tail chute if it has deployed.**

QUESTION 29. You are faced with a field landing. You know the 4000' wind is 240 degrees, 20 kts. What is the surface wind most likely to be?

**D. Less than 240 degrees, less than 20 kts.**

QUESTION 30. Which of the following is most correct when entering a turn?

**B. Lookout, look over the nose, then turn.**

QUESTION 31. What actions should be taken when flying through an area of sink?

**B. Increase speed so as to spend as little time in the sink as possible.**

QUESTION 32. What is the approximate time required to eliminate 1 unit of alcohol from the blood?

**B. 60 minutes.**

QUESTION 33. When keeping a good lookout, how is the most effective scanning achieved?

**A. A series of short, regularly spaced eye movements, progressing across the field of view.**

QUESTION 34. During a solo flight you notice the handling appears to be different from the last time you flew it. What action, if any, should you take after landing?

**C. Bring it to the attention of the duty instructor before it flies again.**

QUESTION 35. While flying in cloud you notice the ASI reading slowly reduces to zero. What is the most likely cause?

**D. There is ice in the pitot system.**

QUESTION 36. You are down wind to land at your home site when you are overtaken by a higher performance glider with only one airbrake extended. Who has right of way?

**A. The other glider, as there is an emergency.**

QUESTION 37. You are half way up the winch launch when the speed increases above max winch launch. What should be your immediate actions?

**A. Lower the nose slightly and give the too fast signal. If, after a few seconds, you are still too fast, then abandon the launch.**

QUESTION 38. You are soaring in a moderate westerly wind, a ridge which runs north west to south east when orographic cloud forms all around. Which compass heading and speed should you fly?

**D. 245 degrees at best L/D.**

QUESTION 39. You are about to join a thermal with two gliders circling in opposite directions. Which way do you turn?

**D. Same direction as the closer glider.**

QUESTION 40. You are about to land as there is thunder storm activity from a Cb close by. What should you particularly be aware of?

**B. Rapid changes in wind strength and direction.**

QUESTION 41. While hill soaring with the hill on your left, you meet a higher performance glider coming the other way. Who has right of way and what actions should you take?

**A. The other glider has right of way and you should turn right.**

QUESTION 42. Whilst in a straight glide you notice another glider on your right at about the same height. The bearing relative to you is remaining constant and the separation is reducing. What actions should you take?

**B. Take avoiding action as the other glider has right of way.**

QUESTION 43. A pilot is faced with a field landing into a slightly down sloping field. What is most likely to happen?

**C. A steeper approach than normal will be flown.**

QUESTION 44. What is the main cause of motion sickness?

**B. The mismatch between visual and vestibular sensory inputs.**

QUESTION 45. After an aerobatic session in a semi-aerobatic glider, the accelerometer reads +4g and -2.5g. What action do you need to take, if any?

**B. Inform the duty instructor before it flies again, as the placard limits have been exceeded.**

QUESTION 46. On returning to your home airfield after a long flight, the duty instructor alerts you on the radio, of a strong wind gradient. What should you do?

**D. All of the above.**

QUESTION 47. You are climbing in good wave lift, but your glider is not equipped with oxygen. At what height is it recommended you should abandon your climb?

**B. 10,000 feet.**

QUESTION 48. While on a cross country, you are continually correcting your heading to the right in order to reach your goal. What might this signify?

**A. The wind is from the right of track.**

QUESTION 49. What disadvantages, if any, would there be in getting too close to cloud base?

**D. All of the above.**

QUESTION 50. How would you check your chosen field for slope?

**D. Fly around the field checking visually for slope.**

QUESTION 51. What are the stall recovery actions?

- A. Stick forward, regain flying speed, level the wings (if necessary) and return to the normal gliding attitude.**

QUESTION 52. What is the correct mnemonic for the glider pre manoeuvre checks?

- C. HASSLL ( height, airframe, straps, security, location and lookout.)**

QUESTION 53. When carrying out the pre manoeuvre checks, what does the airframe part of the check call for?

- C. A check of placarded limiting speeds and loads and that the glider is cleared for the manoeuvres and that the correct configuration is used, i.e. flap settings etc.**

QUESTION 54. Why is it important to judge height without reference to an altimeter when flying a circuit?

- A. Altimeter errors and pressure changes render the altimeter inaccurate and unreliable.**

QUESTION 55. When should a positive control check be carried out?

- D. Before each days flying and immediately after rigging the glider.**

QUESTION 56. What effect would 50 foot trees on the down wind boundary of your chosen field have on your landing run, assuming you would normally touch down just inside the field perimeter?

**B. They will move the touch down point 500 feet further up the field.**

QUESTION 57. A tobacco smoker, compared to a non-smoker, is subjected to altitudes at which the onset of hypoxia is likely. What will probably be the experience of the smoker?

**A. Initial symptoms will be experienced at a lower cabin altitude.**

QUESTION 58. You are suffering from a common cold. What is the most likely event whilst flying?

**B. Changes in pressure are likely to cause discomfort.**

QUESTION 59. Is it important to read NOTAMs before flying cross country?

**B. Yes, it is the pilots responsibility to familiarise themselves with the notices.**

QUESTION 60. You are final gliding back to your home airfield and wish to fly a competition type finish. You call on the radio for permission but get no reply, what should be your actions?

**C. Change to a more conservative type finish followed by a normal circuit.**



QUESTION 61. What are the correct actions when a glider on your left is converging on your flight path.

- A. Although you have right of way, take avoiding action early if necessary.**

QUESTION 62. You are final gliding to your home airfield when you realise that you are unsure of reaching the airfield. What is the best course of action?

- D. Continue towards the airfield, but only if there is an alternative landing area available between you and the airfield.**

QUESTION 63. You are in the process of winch launching when there is a delay at the winch. Your canopy has begun to mist up but you have the cable attached. What is the best course of action?

- B. Release the cable and clear the canopy before launching, a launch failure could be disastrous with poor visibility.**

QUESTION 64. Having consumed a small amount of alcohol, how long should you wait before flying?

- C. 8 Hrs.**

QUESTION 65. You are on medication, the effects of which you are unsure. What is the correct thing to do?

- D. Do not fly. If in doubt seek medical advice.**

QUESTION 66. Who is responsible for stopping a launch?

**B. Anybody.**

QUESTION 67. A Glider overtaking another in the UK shall follow which rule?

**B. Overtake on either side.**

QUESTION 68. Which of the following is correct when 2 aircraft are on a converging course?

**C. The aircraft which has the other on its right shall give way.**

QUESTION 69. What does hyperventilation lead to?

**D. An excess of oxygen.**

QUESTION 70. What effects will cigarette smoking have on a pilot?

**A. It will reduce the amount of oxygen in the blood.**

QUESTION 71. What name is given when the body is suffering from low temperatures?

**B. Hypothermia.**

QUESTION 72. What happens to the amount of oxygen that diffuses across the lung membranes when at high altitudes?

**D. It reduces due to pressure reductions.**

QUESTION 73. What happens to the percentage content of oxygen in the air as altitude increases?

**C. It remains the same.**

QUESTION 74. The respiratory process is governed by chemical receptors in the brain which monitor the levels of oxygen and carbon dioxide. Which of the following is the most accurate statement with respect to a healthy body?

**B. The body is more sensitive to changes in carbon dioxide than oxygen.**

QUESTION 75. Which of the following list of signs and symptoms are associated with hypoxia? 1. Personality changes. 2. Impaired judgement. 3. Muscular impairment. 4. Memory impairment. 5. Sensory loss. 6. Impairment of consciousness.

**D. All of the above items.**

QUESTION 76. Which of the following should be carried out before washing a glider

**A. Ensure that the airbrakes are locked in.**

QUESTION 77. Which 2 conditions are particularly detrimental to GRP structure?

**C. Moisture and solar radiation.**

QUESTION 78. Why should care be taken when using a hose to rinse down a glider after washing?

**B. To ensure that water is not forced into orifices.**

QUESTION 79. In a motor glider, which type of poisoning may result due to a faulty exhaust system?

**A. Carbon monoxide.**

QUESTION 80. What problems exist, if any, detecting carbon monoxide in the cockpit of a motor glider?

**C. It is difficult to recognise because it is odourless and colourless.**

QUESTION 81. What happens to the amount of oxygen available as altitude increases?

**A. Decreases due to decrease in air density.**

QUESTION 82. Lack of oxygen may cause a particularly dramatic effect in a pilot. What is this known as?

**B. Hypoxia.**

## **METEOROLOGY.**

QUESTION 1. At the passage of a cold front, what will the wind do?

**C. Veer and increase.**

QUESTION 2. What type of cloud is associated with moist air flowing over a hill?

**D. Orographic cloud.**

QUESTION 3. What does 'Buys Ballots' law state of the northern hemisphere?

**A. If you stand with your back to the wind the low is on your left.**

QUESTION 4. What is usually the first sign of an approaching warm front in the summer months?

**B. High layer cloud slowly approaching, with weakening soaring conditions.**

QUESTION 5. What weather associated with cumulo nimbus is considered to be the worst hazard when landing a glider?

**D. Increased wind strength together with rapid direction changes, making landing in particular, very difficult.**

QUESTION 6. What is the cause of radiation fog?

- D. Moist air cooling over night to below the dew point with light winds.**

QUESTION 7. In the lower atmosphere, what is regarded as being the accepted reduction of pressure with increase in height?

- B. 1 mb per 30 feet.**

QUESTION 8. What is wind gradient?

- D. Rapid reduction in wind strength close to the ground.**

QUESTION 9. A high pressure inversion in summer will have what effects on soaring?

- B. Prevention of the formation of cumulus, once the inversion is below the dew point.**

QUESTION 10. What is the overlapping of a warm and cold front called?

- A. An occlusion.**

QUESTION 11. What is the name given to a line drawn on a map joining places of equal pressure?

**A. An Isobar.**

QUESTION 12. Whilst flying cross country you notice that the cumulus are getting larger and some have developed an anvil shape at the top. What weather is most likely to follow?

**C. Thunder storms or rain showers leading to unsoarable areas.**

QUESTION 13. What effect in general, does a building high pressure system have on the level of an inversion?

**C. The level falls slowly as the high pressure system approaches.**

QUESTION 14. Where might you find rotor cloud?

**A. Over hill tops and in the lee of hills in association with wave systems.**

QUESTION 15. What happens to visibility and temperature at the passage of a cold front?

**A. Visibility increases and temperature decreases.**



QUESTION 16. What are the effects of diurnal variation on the soaring day?

- B. The wind veers and increases at the start of the day and backs and decreases at the end of the day.**

QUESTION 17. The forecast wind is due to veer by 30 degrees during the morning. If the wind direction is a north easterly at the start, what will be the wind direction after it has veered, assuming the forecast is correct?

- C. 075 degrees.**

QUESTION 18. Due to a high pressure system the prevailing wind across the UK is from the south west on a summers day. What name best describes this wind?

- A. Tropical maritime.**

QUESTION 19. What is the cause of advection fog?

- B. Warm moist air, flowing over a cold surface, being cooled from beneath.**

QUESTION 20. In the atmosphere, air flows from high pressure to low pressure in an attempt to reach equilibrium. Why then, does the wind flow anti clockwise round a low pressure when viewed from above?

- B. Due to the Earths rotation and the Coriolis effect.**

QUESTION 21. In May a deep trough is forecast to pass through the local area during the day. What would be the most likely associated weather?

- C. Particularly violent weather at the passage of the trough, including strong winds, heavy rain and Cb activity.**

QUESTION 22. In August, a weak ridge is forecast across the country the day after a cold front has passed through. What would be the most likely weather?

- B. Good soaring as a ridge reduces the instability behind the cold front preventing over convection.**

QUESTION 23. What is the area, like a saddle on a mountain ridge, bounded by two high pressure systems and two low pressure systems called?

- D. A Col.**

QUESTION 24. What is a cause of temperature inversion?

- A. Descending air warming due to compression and resting on the cooler air mass beneath.**

QUESTION 25. You are flying from a site in the UK where the ridge faces south west. A depression is forecast to track close to the area over the next few days. Where would the centre of the depression need to be, in relation to the ridge site, for the ridge to work best?

- D. North west.**

QUESTION 26. What is a visibility of more than 1000 metres but less than 2000 metres known as?

**B. Mist.**

QUESTION 27. A sea breeze front has been forecast to penetrate inland beyond one of your chosen turning points. Assuming this takes place before you get there, what would be the expected weather conditions as you approach the TP?

**C. Improved at the front, but weak soaring, if any, around the TP.**

QUESTION 28. What is the approximate rate of change of temperature with height for the dry adiabatic lapse rate?

**A. 3 degrees Celsius loss per 1000 feet height gain.**

QUESTION 29. When an air mass rises it cools at a given rate. Cooler air cannot hold as much water vapour as warmer air and therefore eventually becomes saturated. What is this point called, and what happens there?

**D. The dew point, and cloud vertical development starts here.**

QUESTION 30. What are the three main stages called in the life cycle of a thunderstorm?

**A. The cumulus stage, the mature stage and the dissipating stage.**

QUESTION 31. What is meant by the term 'stable air mass'?

- B. The environmental lapse rate is less than the dry adiabatic lapse rate.**

QUESTION 32. What is the name given to the wind effect that increases temperature and raises cloud base in the lee of a hill?

- B. The foehn wind effect.**

QUESTION 33. What is the official definition of fog?

- B. Visibility reduced to below 1000 metres.**

QUESTION 34. Icing effects, in particular, aerodynamics. What other effects does icing have on a glider?

- D. Weight is increased which may alter the C of G position, pitot tubes & statics may become blocked and radio communications may be degraded.**

QUESTION 35. A large depression is centred over the north of Scotland. What will be the wind direction over central & southern England?

- D. From the West.**

QUESTION 36. Three conditions are necessary for a thunderstorm to develop. If deep instability is forecast with a high moisture content, what is the third condition required?

- D. A trigger action such as a front forcing the air aloft, a mountain forcing the air aloft or strong heating of the lower air mass.**

QUESTION 37. What is the approximate rate of change of temperature with height for the saturated adiabatic lapse rate?

- C. 1.5 degrees Celsius loss per 1000 feet height gain.**

QUESTION 38. What causes hail to form?

- C. Water molecules freezing in the up draughts of a Cb, growing with each cycle until too heavy to be sustained by the rising air.**

QUESTION 39. Is it possible for thermals to develop under an extensive layer of strato-cumulus?

- A. Yes, if there is sufficient instability in the atmosphere.**

QUESTION 40. What is the cause of a sea breeze front?

- C. Land heating more quickly than the sea which causes the air to rise overland which in turn leads to advection and the sea breeze.**

QUESTION 41. What is the cause of katabatic winds?

- A. Cooling air becomes more dense and therefore sinks. At night this sinking air will flow down hills and through valleys creating the wind.**

QUESTION 42. What is the name given to the point at which water vapour condenses, and what is the required humidity?

- C. The dew point and requires 100% saturation.**

QUESTION 43. What is the ICAO standard altimeter setting?

- C. 1013.2 millibars, ( hectopascals ), regardless of local conditions.**

QUESTION 44. When an altimeter scale is set to QNH, what does it indicate?

- D. Altitude, which is height above mean sea level.**

QUESTION 45. What conditions are usually associated with warm dry air from the continent flowing over the UK in the summer?

- D. Warm with hazy weather.**

QUESTION 46. Which of the following is the most accurate definition of the adiabatic lapse rate?

- A. The rate of change of temperature due to expansion with increasing height, taking into account the moisture content, i.e. dry or saturated.**

QUESTION 47. The surface temperature is 20 degrees and the trigger temperature is 24 degrees centigrade. Assuming the environmental lapse rate 2 degrees, the dry adiabatic lapse rate is 3 degrees, what height will the thermal go to?

- C. 4000 feet.**

QUESTION 48. At what height is the surface wind measured?

- B. 10 metres. ( 30 feet).**

QUESTION 49. An anticyclone may be described as the atmosphere at rest. What does the air mass consist of?

- D. Slowly subsiding air flowing clockwise in the northern hemisphere.**

QUESTION 50. What would be an indication of a strong wind on a weather Chart?

- B. Isobars close together indicating a steep pressure gradient.**

QUESTION 51. What is the cause of the Coriolis effect?

**A. Rotation of the earth.**

QUESTION 52. Which direction does air flow around a high pressure in the northern hemisphere?

**B. Clockwise.**

QUESTION 53. What is the name given to lines depicting points of equal pressure on a synoptic chart?

**B. Isobars.**

QUESTION 54. What is the cause of anabatic winds.

**B. Warm air becomes less dense and rises. With the sun on a slope during the day, warm air flows up hill creating the wind.**

QUESTION 55. What is the cause of Hoar frost?

**C. Moist air in contact with any surface being cooled below freezing.**



QUESTION 56. What is the cause of hill Fog?

- A. Moist air forced uphill and its temperature reduced to below the dew point.**

QUESTION 57. What are the values of the dry adiabatic lapse rate (DALR) and saturated adiabatic lapse rate (SALR).

- D. DALR = 3 C per 1000 ft, SALR = 1.5 C per 1000 ft.**

QUESTION 58. What is the cause of wind?

- B. Pressure differences trying to reach equilibrium.**

QUESTION 59. Cloud amounts are reported in Oktas. Clouds are also divided into 10 main classifications. What does the information 3/8 SC, 6/8 CS, 4/8 AC indicate?

- A. 3/8 Stratocumulus, 3/4 cover Cirrostratus, 1/2 cover Altocumulus.**

QUESTION 60. What are the most severe weather conditions causing destructive winds, squalls, heavy rain and hail, generally associated with?

- A. Thunderstorms and line squalls over land.**

QUESTION 61. What is a squall line usually associated with?

**C. A fast moving cold front.**

QUESTION 62. What is an Isobar?

**B. A line drawn on a synoptic chart joining points of equal pressure at mean sea level.**

QUESTION 63. What would be a typical characteristic of a Tropical Continental airmass in winter?

**A. Warm and fairly dry.**

QUESTION 64. What is a surface visibility of less than 1000 metres classed as?

**A. Fog.**

QUESTION 65. Which condition is most likely to effect gliding within a stable air mass?

**C. Smoke, haze and dust concentrated in lower levels resulting in poor visibility.**

QUESTION 66. What is the name given to the ratio of existing water vapour in the air, as compared to the maximum amount that could exist at a given temperature?

**C. The relative humidity.**

QUESTION 67. What causes the wind to increase and veer with increase in height?

**B. Geostrophic forces and surface friction.**

QUESTION 68. What is the correct name given to a weather map?

**C. Synoptic Chart.**

QUESTION 69. What name is given to an airmass that originated from Greenland?

**D. Polar Maritime.**

QUESTION 70. What name is given to an airmass that originated from Africa?

**D. Tropical Continental.**

## **NAVIGATION part 1.**

QUESTION 1. What is the approximation when using a 1:250 000 scale chart?

- B. 4 statute miles or 3.5 nautical miles to the inch.**

QUESTION 2. The forecast wind is 230/10. You are on a 50km flight where the desired track is 178 degrees true. What effect will the wind have on the glider?

- A. Drift to left of track with low ground speed.**

QUESTION 3. What is the difference between track and heading?

- B. Heading is the way the glider points / track is the route over the ground.**

QUESTION 4. Your airfield is 270 feet above mean sea level (amsl). If the airfield pressure (QFE) is 998 millibars (hectopascals), what height above the airfield is flight level 55? (Assume 1 millibar = 30 feet).

- D. 5050 feet.**

QUESTION 5. During a final glide, the GPS gives a ground speed of 90 kts and you are flying with an IAS of 75 kts. There is 15 NM to your goal airfield. How long will the glide take and what is the wind component?

- C. 10 minutes and 15 kts tail wind.**

QUESTION 6. In a glider, which of the following defines visual flight rules below 3000 feet?

- D. Clear of cloud, and in sight of the surface, in a flight visibility of 1500 metres when airspeed is 140 kts or less.**

QUESTION 7. What is your average cross country speed if you cover 30 Kms in the first 40 minutes of a flight?

- C. 45 Kph.**

QUESTION 8. After a long busy period in a weak thermal, you are unaware of your exact location. What are the correct actions?

- C. Find three features on the ground and look for them on the map to identify your exact position.**

QUESTION 9. When is the E2B or Airpath compass most reliable for gliding?

- C. Flying straight and level at a constant speed.**

QUESTION 10. The time is 1600 hrs UTC. You are on the second leg of a 300 kilometre triangle and the track for the leg is 275 degrees. Where should the sun be?

- C. Left of straight ahead.**

QUESTION 11. You note on a chart that an airway extends upwards from FL 45. What does this mean with reference to the base of the airway?

- D. The base is 4500 ft indicated with 1013 millibars set on the altimeter subscale.**

QUESTION 12. You contact a thermal immediately underneath an airway, the base of which is FL 35. The in flight visibility is less than 2 Km. Your altimeter is set to QNH at an airfield which is 200 ft AMSL. Given that the sea level pressure is 1013 mb, how high can you legally climb as indicated on your altimeter?

- B. 3000 ft to comply with visual flight rules.**

QUESTION 13. Whilst flying cross country you stray several miles into a large control zone from which gliders are prohibited. What should be your actions on discovering your error?

- B. Land at once and contact the controlling authorities to inform them of your actions.**

QUESTION 14. The first leg of an out and return cross country flight is 045 degrees true. Magnetic variation is 5 degrees west. What will the reciprocal heading be?

- A. 230 Magnetic.**

QUESTION 15. On a 1 : 500 000 scale chart, what length of line would represent 50 Kms?

- A. 4 inches or 10 centimetres.**

QUESTION 16. What does the annotation D124/2 refer to when next to an area bounded by a solid red line on the 1:500 000 scale aeronautical chart?

- A. It is a permanent danger area up to 2000 ft amsl.**

QUESTION 17. What is the main limitation when using a 1:250 000 scale aeronautical chart?

- C. Airspace above 3000 ft is not shown.**

QUESTION 18. What is the importance of reading TNW's (Temporary Navigation Warnings) before flying cross country?

- D. They list important information about notified activities that may effect flight safety.**

QUESTION 19. What does the annotation P106/2.5 refer to when next to a shaded area on the 1:500 000 scale aeronautical chart?

- C. All aircraft are prohibited from entering this area below an altitude of 2500 ft.**

QUESTION 20. What are the legal requirements required to fly a glider cross country?

- D. You carry map(s) clearly marked with controlled and regulated airspace.**

QUESTION 21. Which ground features are most useful for navigation?

**C. Motorways and large towns.**

QUESTION 22. Your airfield is 330 feet above mean sea level (amsl). If the airfield pressure (QFE) is 996 millibars (hectopascals), what height above the airfield is flight level 55? (Assume 1 millibar = 30 feet).

**A. 4980 feet.**

QUESTION 23. Which of the following is correct for maintaining VMC in class D airspace whilst above 3000ft amsl but below FL100?

**B. The glider must remain 1500 metres horizontally and 1000 ft vertically away from cloud in a flight visibility of 5Km or greater.**

QUESTION 24. What is the approximation when using a 1:500 000 scale chart?

**C. 8 statute miles or 7 nautical miles to the inch.**

QUESTION 25. How often are TNW information bulletins published?

**D. Twice weekly.**



QUESTION 26. What does the annotation R14/2.5 refer to when next to an area bounded by a solid red line on a 1:500 000 scale aeronautical chart?

- A. Entry is restricted to this area below 2500 ft AMSL.**

QUESTION 27. What does the annotation \*D130/1 refer to when next to an area bounded by a solid red line on a 1:500 000 scale aeronautical chart.

- B. Entry is prohibited to this danger area during the NOTAM'd period of the activity.**

QUESTION 28. What is the relevance of a purple airway to gliding?

- C. The airway marks prohibited airspace during a royal flight.**

QUESTION 29. What do isogonal lines indicate on aeronautical charts?

- B. They are a line joining places of equal magnetic variation.**

QUESTION 30. On a 40 nm final glide at 50 Kts indicated airspeed you notice there is a 10 Kt tail wind. How long will the last 20 nms take?

- B. 20 minutes.**

QUESTION 31. What will be the effect of a steel object being placed close to an aircraft compass?

**C. The compass deviation will be effected.**

QUESTION 32. With 15 nm to go and a glide angle of 30:1 at 60 Kts, what height is required to arrive at the goal with 1000 ft to spare?

**D. 4000 ft.**

QUESTION 33. What is your estimated heading on a long final glide where the track is 050 degrees and there is a cross wind of 15 Kts from the right.

**B. More than 050 degrees.**

QUESTION 34. Assuming nil wind, after the first leg of a 200 Km flight you notice that your average speed is 50 Kph. If conditions remain the same, approximately how long will the flight take?

**D. 4 hours.**

QUESTION 35. How can the magnetic variation be determined for any given point?

**D. Check on a 1:500 000 scale aeronautical chart where the magnetic variation is shown at 1 degree intervals.**

QUESTION 36. While on a task in the UK you notice the compass appears to be a bit erratic. The time is 1300 UTC and the desired track is 090 degrees. Where should the sun be?

**B. On the right.**

QUESTION 37. Your cross country track takes you through a MATZ. What should your actions be?

**A. Fly through the MATZ but be aware of the ATZ and possible traffic on extended centre lines.**

QUESTION 38. The airfield from which you are flying is 600 ft AMSL. With the altimeter set to zero before flight, the subscale reads 1007 millibars. What will the altimeter read at the base of an airway extending from FL 45 upwards. (Assume 30 ft per millibar).

**A. 4320 feet.**

QUESTION 39. Each individual entry in TNW's has a 4 digit code as part of the prefix. What does this code relate to?

**C. The most northerly co-ordinate or latitude.**

QUESTION 40. What is the purpose of a compass card in a glider?

- A. To take into account the errors present after the compass has been swung.**

QUESTION 41. The first leg of an out and return cross country flight is 135 degrees true. Magnetic variation is 5 degrees west. What will the reciprocal heading be?

- A. 320 Magnetic.**

QUESTION 42. The forecast wind is 230/10. You are on a 50km flight where the desired track is 078 degrees true. What effect will the wind have on the glider?

- C. Drift to left of track with high ground speed.**

## **PRINCIPLES OF FLIGHT.**

QUESTION 1. When is total drag at a minimum?

- C. When lift dependant drag is equal to zero lift drag.**

QUESTION 2. What will be the reading on the ASI if the Dynamic source of the ASI is blocked?

- C. It will not respond.**

QUESTION 3. What is meant by the aspect ratio of a glider?

- A. The ratio of wing span to mean chord.**

QUESTION 4. Which two quantities are required to be present for a glider to spin?

- B. High angle of attack and yaw.**

QUESTION 5. Below what maximum speed is it safe to use full deflection of any one control, regardless of the situation?

- D.  $V_a$ . Design manoeuvring speed.**

QUESTION 6. What is the purpose of the gliders fin?

**B. To provide directional stability.**

QUESTION 7. On a silver duration flight, soarable conditions stop after four and a half hours. You are at 5000 ft. What is the best speed to fly in order to complete the flight?

**A. Minimum sink.**

QUESTION 8. With regard to any glider, what is the standard spin recovery for minimum height loss?

**B. Full opposite rudder, with ailerons neutral move stick progressively forward until the spinning stops, centralise the rudder and recover from the dive.**

QUESTION 9. While maintaining the normal gliding attitude you notice that the air speed indicator is reading low and erratic. What is the most likely cause?

**B. Water in the Pitot system.**

QUESTION 10. 'Wash out' is a term used to describe a particular design feature of a glider. What does it describe?

**A. A twist in the wing, such that the inboard part of the wing stalls before the outboard, hence preventing wing drop at the stall.**

QUESTION 11. What is the approximate distribution of production of lift on a glider wing?

**C. 70% from above and 30% from below.**

QUESTION 12. What happens to induced drag as airspeed is increased from the stall towards  $V_{ne}$ ?

**D. Induced drag reduces inversely as the square of the IAS.**

QUESTION 13. Three forces act on a glider in flight. Which force, or part of a force, causes a glider to turn?

**B. Part of total lift acting in the direction of the turn.**

QUESTION 14. What is the importance of indicated airspeed (IAS) and true airspeed (TAS), when flying at altitude?

**A. IAS is always less than TAS and the ASI under reads the true airspeed.**

QUESTION 15. If the 1 'g' stalling speed is 34 knots, what will be the stalling speed in a steep turn with the accelerometer reading 4 'g'?

**D. 68 knots.**

QUESTION 16. Which of the following is the most correct with regards to the amount of lift being produced by a wing as the angle of attack is increased from 0 degrees?

- C. It increases until the stalling angle, then reduces rapidly towards zero.**

QUESTION 17. What is the aerodynamic purpose of the gliders tailplane?

- D. To provide longitudinal stability.**

QUESTION 18. What effect do air brakes have on a glider?

- C. Increase stability, reduce lift and increase drag.**

QUESTION 19. What is the definition of a Mean Camber line?

- A. A line joining the centres of curvature between the Leading and Trailing edges and equidistant from the upper and lower surfaces.**



QUESTION 20. What happens to the amounts of lift and drag being produced by the left wing when the control column is moved to the left?

**A. Less lift and less drag.**

QUESTION 21. How does a change of weight affect the stalling speed of a glider?

**C. The stall speed increases with increasing weight.**

QUESTION 22.  $V_{ne}$  is calculated by taking the maximum design dive speed ( $V_d$ ), and multiplying it by 0.9. Is it therefore safe to exceed  $V_{ne}$ , and if so, why?

**D. No,  $V_{ne}$  means Velocity never exceed.**

QUESTION 23. What happens to the centre of gravity and glider stability if the cockpit load is reduced?

**A. C of G moves rearwards and longitudinal stability reduces.**

QUESTION 24. What happens to profile drag as airspeed is increased from the stall towards  $V_{ne}$ ?

**A. Profile drag increases approximately as the square of the IAS.**

QUESTION 25. A glider with a glide angle of 30:1 is at 3000 feet. Assuming still air and allowing 800 feet for a circuit, how far can the glider travel before commencing a circuit to land?

**C. 10.85 nautical miles.**

QUESTION 26. In which direction does lift developed by the wing of an aircraft in flight act?

**A. Perpendicular to the chord line.**

QUESTION 27. It is vital that the weights and positions of cockpit loads are within limits. What could be affected when flying with loads outside those limits?

**D. Stability.**

QUESTION 28. What is the main advantage of adding water ballast to the tail of a glider?

**B. The centre of gravity may be adjusted to place the trimmed elevator in the position for minimum drag.**

QUESTION 29. What does the Barometric Pressure Scale enable the pilot to achieve?

**A. To reset the altimeter datum.**

QUESTION 30. Why is the capacity flask insulated?

**A. To prevent temperature changes affecting the variometer readings.**

QUESTION 31. In order to reduce the likelihood of wing tip stalling, a wing can be designed incorporating wash out. What does this involve?

**D. A reduction in the angle of attack towards the wing tip.**

QUESTION 32. In flight when no pitch is present, the tailplane and elevator provide no pitching moment. What happens when the control column is moved forward?

**A. The elevator moves down and produces lift at the tail in an upward sense thus pitching the nose down.**

QUESTION 33. What is the purpose of wing sealing tape?

**B. Helps to reduce interference drag.**

QUESTION 34. What happens to total drag as airspeed is increased from the stall towards  $V_{ne}$ ?

**B. Total drag reduces towards best L/D then increases again.**

QUESTION 35. The airspeed indicator has a yellow band. What does the start of the yellow band indicate?

**B. The maximum manoeuvring speed, above which inputs of more than 1/3 control deflection of any one control must not be used.**

QUESTION 36. What happens to the stalling speed in a turn?

- A. The stalling speed increases in the turn due to a component of total lift now acting in the direction of the turn..**

QUESTION 37. Why is there a relationship between flap movement and pitch?

- B. Flaps down and glider will pitch nose down due to centre of pressure moving rearwards.**

QUESTION 38. What is meant by the term 'angle of attack'?

- D. The angle between the chord line and the relative airflow.**

QUESTION 39. What are the two main types of airflow over a wing?

- C. Laminar and turbulent.**

QUESTION 40. What causes adverse yaw or aileron drag?

- A. An increase in lift dependent drag on the up going wing.**

QUESTION 41. What is the definition of a Chord Line?

**C. A straight line joining the Leading and Trailing edges.**

QUESTION 42. What is the purpose of a gliders dihedral?

**C. To help increase lateral stability.**

QUESTION 43. How is the Aspect Ratio of a wing calculated?

**B. Dividing span by chord.**

QUESTION 44. What does stagnation point refer to?

**B. The point on a wing leading edge where air is brought to rest.**

QUESTION 45. What is the definition of Centre of Pressure?

**D. The point on the chord line through which total reaction acts.**

QUESTION 46. Streamlining a flat plate section reduces which type of drag?

**D. Form drag.**

QUESTION 47. Airflow meeting at the junctions of wing and fuselage create which type of drag?

**A. Interference drag.**

QUESTION 48. The ASI on Gliders is colour coded. What does the Green Arc represent?

**B. From Minimum sink to Maximum Manoeuvring speed.**

QUESTION 49. What is the layer of air next to a surface of an aircraft in flight called?

**B. Boundary layer.**

QUESTION 50. A small frontal area will reduce which type of drag?

**D. Form drag.**

QUESTION 51. Which of the following is the best combination to reduce Vortex drag?

**C. High aspect ratio/high speed/low all up weight.**

QUESTION 52. What is the primary purpose of flaps?

**A. To improve glide ratio over a wider range of airspeeds.**

QUESTION 53. What will be the effect on a gliders induced drag if water ballast is added to the wings?

**D. It will increase due to the greater lift required to equal the increase in weight.**

QUESTION 54. As angle of attack increases, what direction will the Centre of pressure move?

**D. Forward until the stalling angle, then rapidly back.**

QUESTION 55. What is the centre of pressure?

**D. The point on the chord line through which the force of lift is said to act.**

QUESTION 56. What happens to the centre of pressure as the AoA is increased from zero degrees?

- A. It moves forward until the stall, then moves rapidly rearwards.**

QUESTION 57. When using flaps, what is the basic rule when making significant changes in speed whilst flying cross country?

- A. Increase speed with flaps then stick, reduce speed with stick then flaps.**

QUESTION 58. In which direction does the resultant line of all drag forces acting on an aircraft in flight act?

- C. Parallel to the relative airflow.**

QUESTION 59. What is the first action as part of the standard stall recovery?

- D. Control column centrally forward.**

QUESTION 60. Recovery from autorotation can be effected by which immediate action?

- A. Reduction in angle of attack.**



QUESTION 61. Which of the following is correct when referring to an aircraft's 3 axis?

**C. They are fixed relative to the aircraft irrespective of attitude.**

QUESTION 62. From which source does the Variometer take static pressure in order to compensate for changes in airspeed?

**D. The Brunswick tube.**

QUESTION 63. What causes induced drag?

**C. The generation of lift, leading to chord and span wise airflow, trailing edge and wing tip vortices.**

QUESTION 64. Which type of drag is reduced by polishing?

**B. Surface friction.**

QUESTION 65. What will happen to the Altimeter if the Static source is blocked?

**D. It will not respond.**

QUESTION 66. What is the main advantage of adding water ballast to the wings of a glider?

- B. Due to increased weight, the glider can fly faster achieving the same performance.**

QUESTION 67. What happens to lift and drag when flaps are moved from a cruise setting to a thermalling setting?

- D. Lift increases and drag increases.**

QUESTION 68. When a glider is on the ground, what is the pressure in the capacity flask equal to?

- B. Static pressure.**

QUESTION 69. In the Northern Hemisphere, when will a magnetic compass change its reading without the aircraft changing its heading?

- D. The aircraft is heading East or West and accelerates or decelerates.**

QUESTION 70. In the Northern Hemisphere, if the aircraft is in a constant rate turn, when will the greatest effect on the magnetic compass be seen?

- B. North / South headings.**

QUESTION 71. Which method of reducing dip error in the magnetic compass is the correct one?

**C. Suspend the magnets below the needle.**

QUESTION 72. Which of the following is correct when turning onto north in the northern hemisphere?

**B. Roll out of the turn about 25° - 30° after the compass reads north.**

QUESTION 73. If the battery source powering the turn indicator becomes discharged and the rotor speed is reduced, what will be the effect on the indicator readings?

**B. A higher rate of turn will be indicated on the instrument than is actually achieved.**

QUESTION 74. What is the principle of the gyroscope in the turn indicator?

**A. If a turning force is applied to the gyro, the resultant movement will be 90° from the initial force and in the direction of rotation.**

QUESTION 75. What does the term Total Reaction mean?

**C. The resultant of all Lift Forces acting on an aerofoil.**

QUESTION 76. What is the point called at which laminar flow becomes turbulent?

**A. Transition point.**

QUESTION 77. As angle of attack increases, what happens to the Centre of pressure?

**D. Forward until the stalling angle, then rapidly back.**

QUESTION 78. The centre of pressure is the point through which the total reaction is said to act. At normal angles of attack, where does it lie?

**B. One third of the chord aft of the leading edge.**

QUESTION 79. How can the effect of aileron drag be reduced?

**B. Fitting Differential ailerons.**

QUESTION 80. What will be the effect on an altimeter, when flying from a high pressure region to a low pressure region?

**C. The altimeter will over read the true height, if left on the original pressure setting.**

QUESTION 81. Ice forms over the pitot head during a wave flight. What indications will there be that this has occurred?

**D. The indicated airspeed will slowly reduce to zero.**

QUESTION 82. Since pressure decreases with height, what is the effect on glider instruments above 10,000 feet?

**A. Little or no effect on the altimeter, however, the airspeed indicator will under read the true airspeed.**

QUESTION 83. The static source of the ASI is blocked during descent. What will the instrument read?

**A. Over read.**

QUESTION 84. The ASI is colour coded on most gliders. What does the yellow arc represent?

**A. Maximum Manoeuvring speed to VNE.**

QUESTION 85. The Pitot source is blocked on the Altimeter. What will the instrument read?

**D. Fail to operate.**

QUESTION 86. What does the variometer measure?

**B. Rate of change of pressure.**

QUESTION 87. What does the Barometric Pressure Scale enable the pilot to do?

**A. To reset the altimeter datum.**

XXXXXXXXXX

## **RADIO TELEPHONY.**

QUESTION 1. The frequency 130.4 MHz is allocated for what purpose?

- D. Cloud flying and related cross country messages only.**

QUESTION 2. What are the requirements with which you must comply to operate a radio in a glider where only the gliding frequencies are available?

- B. A licence for the radio only.**

QUESTION 3. What are the requirements for a glider pilot to transmit in the aeronautical VHF band?

- A. A radio operators licence is required if any frequencies other than BGA gliding frequencies are available on the radio.**

QUESTION 4. A radio installed in a motor vehicle for the purpose of communication with gliders must have a Radio communications licence. To whom do you apply for this licence?

- A. The Civil Aviation Authority.**

QUESTION 5. What is the purpose of a 'blind transmission'?

- A. To pass information to a station you believe can hear you although you cannot hear them.**

QUESTION 6. When operating in class 'B' airspace, at what flight levels do you call entering and leaving the 'Gliding area'?

- B. Establish contact at FL 200 in the climb and call leaving at FL 245 in the descent.**

QUESTION 7. Which of the following is correct for a gliders initial transmission to a ground station? (Glider call sign = Alpha Charlie Zulu. Ground station = Bicester base)

- B. Bicester base this is Alpha Charlie Zulu.**

QUESTION 8. Before entering cloud, the pilot of a glider should make a general announcement of height and position. Which frequency should be used?

- D. 130.4 MHZ.**

QUESTION 9. Which of the following frequencies is shared with other non gliding users?

- C. 129.9 MHZ .**

QUESTION 10. Which of the following frequencies is solely for gliding use?

- B. 130.125 MHZ .**



QUESTION 11. A glider radio must meet certain standards. Which of the following is a true statement?

**D. A glider radio must comply with CAA specifications.**

QUESTION 12. Which of the following is a ground to ground frequency only?

**C. 129.9 MHZ.**

QUESTION 13. Competition gliding relies heavily on the use of radio. What are the frequencies allocated to competitions?

**A. Primary 130.1 MHZ and secondary 130.125 MHZ.**

QUESTION 14. Which frequency is allocated for the purpose of lead and follow training?

**D. 130.125 MHZ.**

QUESTION 15. What is the main use of the frequency 129.975 MHZ?

**A. Control purposes with in 10 NM radius and up to 3000' at approved sites only.**

QUESTION 16. Which of the following call signs does not comply with the ICAO phonetic alphabet?

**C. Oscar.....Quebec.....Sugar.**

QUESTION 17. Which of the following frequencies will help with navigational assistance in the event that you become lost?

**D. 121.5 MHZ.**

QUESTION 18. What should your actions be on hearing a distress or urgency transmission intended for a ground station?

**B. Maintain radio silence, but note all the details in case you should have to relay the message.**

QUESTION 19. Which of the following call signs complies with the ICAO phonetic alphabet?

**A. Alpha.....Charlie.....Hotel.**

QUESTION 20. You are unfortunate enough to require urgent medical assistance after a field landing accident. Your radio has remained serviceable. Which frequency should be used to make your Mayday call?

**C. 121.5 MHZ but in the event of no reply, any gliding frequency.**

QUESTION 21. You have made contact with a ground station to pass the details of a distress message. Which of the following should you transmit?

**D. All of the above.**

QUESTION 22. What are the requirements for a radio transmitting set installed in a retrieve car?

**C. Must be licenced with the Civil Aviation Authority.**

QUESTION 23. A station you are calling complains of poor reception. What should your actions be?

**C. Wait and try again when higher up.**

QUESTION 24. The following is a list of frequencies giving continuously updated meteorological reports. A 128.6MHz, B 126.6MHz, C 135.375MHz and D 125.725. What is the name given to this service?

**C. Volmet.**

QUESTION 25. Which of the following is a true characteristic of aeronautical VHF radio

**A. Range to the ground station increases with aircraft height.**

QUESTION 26. Your cross country route takes you through class D airspace. Which of the following is the most true statement?

- C. You must call the controlling agency and hold a current RT licence.**

QUESTION 27. While flying you note that the previously busy gliding frequency you have been monitoring is completely silent. What should your actions be?

- B. Check that your transmit button is not jammed in the transmit position.**

QUESTION 28. Aviators use a system of 'Q' codes to speed communications. Which of the following codes denotes atmospheric pressure at aerodrome level?

- C. QFE.**

QUESTION 29. Aviators use a system of 'Q' codes to speed communications. Which of the following codes denotes the sea level pressure setting on the altimeter sub-scale?

- B. QNH.**

**NAVIGATION part 2.**

Assume through out that magnetic variation is 5 degrees west and 1mb = 30 ft.  
You require a pen, ruler, protractor and a copy of the ICAO 1:500 000 scale  
aeronautical chart ***SOUTHERN ENGLAND AND WALES.***

1. The task is an out and return from Lasham. Draw a line on your map from Lasham  
(N 51-11.359. W 001-01.899) to Didcot power station (N 51-37.297. W 001-15.658).

QUESTION 1. What is the out bound true track and the return magnetic track?

**A. 342 T and 167 M.**

QUESTION 2. Just south of Didcot is an area marked P106/2.5. What rules apply to a  
glider when flying in the vicinity of this area?

**B. The glider may fly overhead at greater than 2500 ft above mean  
sea level.**

QUESTION 3. What is the approximate distance of each leg?

**D. 27 nautical miles or 50 kilometres.**

QUESTION 4. How high above the ground is the tallest part of Didcot power station?

**A. 654 ft.**

QUESTION 5. How will the M4 be of assistance as a navigational aid?

**A. Assuming you are on track, it will help with assessing progress  
along track.**

QUESTION 6. Approximately half way along the first leg the chart shows an area annotated LTMA 4500' ALT +. What indication would you expect on your altimeter, assuming it was set to zero before take off, at the base of the airspace?

**C. 3880 ft.**

QUESTION 7. With the altimeter set to 618 ft before take off, how high can you climb before commencing the task?

**D. 5500 ft.**

QUESTION 8. Assuming the altimeter is set to the Lasham QNH, what is the lowest indicated height allowed when crossing R101/2.4?

**A. 2400 ft.**

QUESTION 9. What will be the duration of the task if the average speed is 50 Kph?

**B. 2 hours.**

QUESTION 10. If the glide ratio is 1:30, and assuming there is nil wind, what height will be needed for a 4 Nm final glide when crossing the M3 at Basingstoke to arrive at 800 ft?

**C. 1600 ft above Lasham.**

## **NAVIGATION part 2.**

Assume through out that magnetic variation is 5 degrees west and 1mb = 30ft.  
You require a pen, ruler, protractor and a copy of the ICAO 1:500 000 scale aeronautical chart ***NORTHERN ENGLAND AND NORTHERN IRELAND.***

1. The task is an out and return from Camphill. Draw a line on your map from Camphill (N 53-18.303. W 001-43.746) to Rufforth (N 53-57.100. W 001-11.332).

QUESTION 1. What is the out bound true track and the return magnetic track?

**A. 027 T and 212 M.**

QUESTION 2. Just south of Rufforth is an area marked MATZ. What rules apply to a glider when flying in the vicinity of this area?

**B. The glider may fly within the MATZ but must not penetrate the ATZ.**

QUESTION 3. What is the approximate distance of each leg?

**D. 43.3 nautical miles or 80.2 kilometres.**

QUESTION 4. How high above the ground is the tallest part of the mast between Castleford and Knottingley?

**A. 654 ft.**

QUESTION 5. How will the M1 be of assistance as a navigational aid?

**A. Assuming you are on track, it will help with assessing progress along track.**

QUESTION 6. Approximately half way along the first leg the chart shows an area annotated CTA 3000' - FL85. What indication would you expect on your altimeter, assuming it was set to zero before take off, at the base of the airspace?

**C. 1650 ft.**

QUESTION 7. With the altimeter set to 1013.2 millibars before take off, how high can you climb overhead Camphill before commencing the task?

**D. 6500 ft.**

QUESTION 8. Assuming the altimeter is set to the Camphill QNH, what is the lowest indicated height allowed if crossing the Church Fenton ATZ?

**A. 2029 ft.**

QUESTION 9. What will be the duration of the task if the average speed is 50 Kph?

**B. 3 hours 12 minutes.**

QUESTION 10. If the glide ratio is 1:30, and assuming there is nil wind, what height will be needed for a 16.5 Nm final glide when crossing the M1 at Barnsley to arrive at 800 ft?

**C. 4144 ft above Camphill.**



## **NAVIGATION part 2.**

Assume through out that magnetic variation is 6 degrees west and 1mb = 30ft.  
You require a pen, ruler, protractor and a copy of the ICAO 1:500 000 scale aeronautical chart **SCOTLAND, ORKNEY AND SHETLAND.**

1. The task is an out and return from Portmoak. Draw a line on your map from Portmoak (N 56-11.328. W 003-19.311) to Aboyne (N 57-04.515. W 002-50.571).

QUESTION 1. What is the out bound true track and the return magnetic track?

**A. 016 T and 202 M.**

QUESTION 2. Just south of Dundee is an area marked MATZ. What rules apply to a glider when flying in the vicinity of this area?

**B. The glider may fly within the MATZ but must not penetrate the ATZ.**

QUESTION 3. What is the approximate distance of each leg?

**D. 55.5 nautical miles or 103 kilometres.**

QUESTION 4. How high above the ground is the tallest part of the mast approximately 5 nm due north of Dundee?

**A. 784 ft.**

QUESTION 5. How will the river Tay be of assistance as a navigational aid?

**A. Assuming you are on track, it will help with assessing progress along track.**

QUESTION 6. At the end of the first leg the chart shows an area annotated Aberdeen CTA 3000' to FL115. What indication would you expect on your altimeter, assuming it was set to zero before take off, at the base of the airspace?

**C. 2640 ft.**

QUESTION 7. With the altimeter set to 1013.2 millibars before take off, how high can you climb before commencing the task?

**D. 6500 ft.**

QUESTION 8. Assuming the altimeter is set to the Portmoak QNH, what is the lowest indicated height allowed if crossing the Perth ATZ?

**A. 2397 ft.**

QUESTION 9. What will be the duration of the task if the average speed is 50 Kph?

**B. 4 hours 7 minutes.**

QUESTION 10. If the glide ratio is 1:30, and assuming there is nil wind, what height will be needed for a 14 Nm final glide when passing abeam Errol to arrive at 800 ft?

**C. 3640 ft above Portmoak.**