

Examination Center DGAC

Examination Date _____

Name _____

Firstname _____

Birthday _____

- 1 The greatest error between ground distance to the DME station and the indicated distance is (1.00 P.)
- [A] Low altitudes close to the DME station.
 - [B] High altitude at maximum range.
 - [C] High altitudes close to the DME station.
 - [D] Low altitudes at maximum range.

- 2 The ICAO definition of ETA is the: (1.00 P.)
- [A] actual time of arrival at a point or fix
 - [B] estimated time of arrival at an en-route point or fix
 - [C] estimated time en route
 - [D] estimated time of arrival at destination

- 3 The range of the Secondary Surveillance Radar is (1.00 P.)
- [A] 1000 nm
 - [B] 200 nm
 - [C] 50 nm
 - [D] 100 nm

- 4 An aircraft travels 100 statute miles in 20 MIN, how long does it take to travel 215 NM? (1.00 P.)
- [A] 100 MIN
 - [B] 90 MIN
 - [C] 80 MIN
 - [D] 50 MIN

- 5 When operating the Airborne Weather Radar (AWR) the function switch WEA or WX is used for (1.00 P.)
- [A] Ground mapping by the use of a cosecant beam.
 - [B] Examine the most turbulent areas in clouds by using an iso echo display.
 - [C] The normal position for observing clouds using a narrow conical pencil beam.
 - [D] A narrow conical pencil beam used in conjunction with tilt control to give heights of clouds, and ground mapping at long range.

- 6 Given:
TAS = 220 kt;
Magnetic course = 212 °,
W/V 160 °(M)/ 50kt,
Calculate the GS? (1.00 P.)
- [A] 250 kt
[B] 290 kt
[C] 186 kt
[D] 246 kt

- 7 Weather radar operates in the SHF band because (1.00 P.)
- [A] Of the long ranges needed to know the weather ahead.
 - [B] The short wave lengths produced by SHF give excellent reflections from large water droplets.
 - [C] Narrow beams can be transmitted only on SHF.
 - [D] The scanner dish required by SHF is small and can fit into the nose of an aircraft.

- 8 Given:
 FL250,
 OAT -15 °C,
 TAS 250 kt.
 Calculate the Mach No.? (1.00 P.)
- [A] 0.44
[B] 0.40
[C] 0.39
[D] 0.42

- 9 A radio altimeter indicates the height above the ground of the (1.00 P.)
- [A] The pressure altimeter static vent.
 - [B] The vertical stabilizer of the tail.
 - [C] Aerials.
 - [D] Main landing gear.

- 10 During a low level flight 2 parallel roads that are crossed at right angles by an aircraft. The time between these roads can be used to check the aircraft: (1.00 P.)
- [A] position
 - [B] track
 - [C] groundspeed
 - [D] drift

11 The type of emission used by ILS is (1.00 P.)

[A] A 9W

[B] AIA

[C] J3E

[D] A 8 W

- 12 Assuming zero wind, what distance will be covered by an aircraft descending 15000 FT with a TAS of 320 kt and maintaining a rate of descent of 3000 FT/MIN? (1.00 P.)
- [A] 38.4 NM
 - [B] 19.2 NM
 - [C] 26.7 NM
 - [D] 16.0 NM

- 13 Given:
Magnetic track = 315° ,
HDG = $301^\circ(M)$,
VAR = $5^\circ W$,
TAS = 225 kt,
The aircraft flies 50 NM in 12 MIN.
Calculate the W/V($^\circ T$)? (1.00 P.)
- [A] $355^\circ/15$ kt
[B] $190^\circ/63$ kt
[C] $195^\circ/61$ kt
[D] $195^\circ/63$ kt

- 14 Transmission of the ILS ident occurs on the (1.00 P.)
- [A] All the options are correct.
 - [B] Glide slope transmission.
 - [C] Fan markers transmission.
 - [D] Localizer transmission.

- 15 The frequency of an SSR ground transmission is: (1.00 P.)
- [A] 1030 +/- 0.2 MHz
 - [B] 1090 +/- 0.3 MHz
 - [C] 1120 +/- 0.6 MHz
 - [D] 1050 +/- 0.5 MHz

- 16 The ICAO standard height of the ILS reference point is (1.00 P.)
- [A] 15 feet.
 - [B] 20 feet.
 - [C] 10 feet.
 - [D] 50 feet.

- 17 Which of the following gives the best information about the progress of a flight between 2 en-route waypoints from a RNAV equipment? (1.00 P.)
- [A] Elapsed time on route.
 - [B] ETO
 - [C] ATA
 - [D] ETD

- 18 The ILS inner, middle and outer marker frequencies are (1.00 P.)
- [A] Variable but paired and are found in various flight guides.
 - [B] Between 110.3 MHZ and 118 MHZ.
 - [C] They are all 75 MHZ.
 - [D] Found in the Aeronautical Publications for each particular ILS approach plates.

- 19 The Doppler Navigation System is based on: (1.00 P.)
- [A] radio waves refraction in the ionosphere
 - [B] radar principles using frequency shift
 - [C] Doppler VOR (DVOR) Navigation System
 - [D] phase comparison from ground station transmissions

- 20 The maximum safe deviation from the ILS glide path during an approach using a 5 dot CDI is (1.00 P.)
- [A] 4 dots fly up.
 - [B] 5 dots fly up.
 - [C] 2½ dots fly up
 - [D] 2 dots fly up.

- 21 The GPWS operates in a height range above ground level of (1.00 P.)
- [A] 300 ft to 900 ft.
 - [B] 100 ft to 1 800 ft.
 - [C] 200 ft to 2 500 ft
 - [D] 50 ft to 2 450 ft

- 22 One purpose of compass calibration is to determine the deviation: (1.00 P.)
- [A] on any heading
 - [B] at any latitude
 - [C] on a given heading
 - [D] on N, S, E and W only

- 23 The main factor which determines the minimum range that can be measured by a pulsed radar is pulse: (1.00 P.)
- [A] amplitude
 - [B] repetition rate
 - [C] length
 - [D] frequency

24 The peak value of current either positive or negative is known as; (1.00 P.)

[A] Amplitude

[B] Cycle

[C] Frequency

[D] wavelength

- 25 A transmitter with a vertical aerial or antenna produces; (1.00 P.)
- [A] a horizontally polarised radio wave.
 - [B] a loop type wave.
 - [C] a vertically polarised radio wave.
 - [D] either a) or b) depending on receiver antenna.

- 26 Ignoring pulse length, the maximum pulse repetition frequency (PRF) that can be used by a primary radar facility to detect targets unambiguously to a range of 200 NM is:
(pps = pulses per second) (1.00 P.)
- [A] 782 pps
 - [B] 308 pps
 - [C] 405 pps
 - [D] 375 pps

- 27 Which of the following is the ICAO allocated frequency band for ADF receivers?
(1.00 P.)
- [A] 200 - 2000 kHz
 - [B] 300 - 3000 kHz
 - [C] 255 - 455 kHz
 - [D] 200 - 1750 kHz

28 The ILS-glide slope employs frequencies under the; (1.00 P.)

- [A] HF band
- [B] VHF band
- [C] UHF band
- [D] SHF band

- 29 An island appears 30° to the left of the centre line on an airborne weather radar display. What is the true bearing of the aircraft from the island if at the time of observation the aircraft was on a magnetic heading of 276° with the magnetic variation 12°W ? (1.00 P.)
- [A] 234°
 - [B] 038°
 - [C] 054°
 - [D] 318°

30 An NDB emits radio waves of 400 M wavelength.

What is the frequency? (1.00 P.)

- [A] 75 MHZ
- [B] 750 MHZ
- [C] 750 KHZ
- [D] 75 KHZ

- 31 ICAO specifications are that range errors indicated by Distance Measuring Equipment (DME) should not exceed: (1.00 P.)
- [A] + or - 0.25 NM plus 1.25% of the distance measured
 - [B] + or - 1.25 NM plus 0.25% of the distance measured
 - [C] + or - 0.5 NM or 3% of the distance measured whichever is the greater
 - [D] + or - 0.25 NM plus 3% of the distance measured up to a maximum of 5 NM

- 32 Peak amplitude for an audio frequency is 4.5 cm and that of the carrier wave is 5 cm.

Calculate the depth of modulation. (1.00 P.)

- [A] 4.5%
- [B] 100%
- [C] 111%
- [D] 90%

- 33 In order to obtain an ADF bearing on a system using sense and loop aerials, the:
(1.00 P.)
- [A] sense aerial must be tuned separately
 - [B] mode selector should be switched to 'loop'
 - [C] BFO switch must be selected to 'ON'
 - [D] signal must be received by both the sense and loop aerials

- 34 Which of the following is an advantage of using Amplitude Modulation over Frequency Modulation? (1.00 P.)
- [A] Less modulating power is required when using AM.
 - [B] Less complex transmitters are used to propagate the AM signals.
 - [C] AM LHF band free from static.
 - [D] AM transmissions utilise a narrower bandwidth.

- 35 Every 10 kt decrease in groundspeed, on a 3° ILS glidepath, will require an approximate: (1.00 P.)
- [A] decrease in the aircraft's rate of descent of 100 FT/MIN
 - [B] increase in the aircraft's rate of descent of 50 FT/MIN
 - [C] increase in the aircraft's rate of descent of 100 FT/MIN
 - [D] decrease in the aircraft's rate of descent of 50 FT/MIN

36 An aircraft is flying at FL 330 .

What is the maximum range that a signal can be received from a transmitter at pressure altitude 5500 ft ? (1.00 P.)

[A] 319.7 NM

[B] 450.3 NM

[C] 309.7 NM

[D] 115.4 NM

- 37 MLS installations notified for operation, unless otherwise stated, provide azimuth coverage of: (1.00 P.)
- [A] + or - 20° about the nominal course line out to a range of 10 NM
 - [B] + or - 40° about the nominal course line out to a range of 30 NM
 - [C] + or - 40° about the nominal course line out to a range of 20 NM
 - [D] + or - 20° about the nominal course line out to a range of 20 NM

38 A common source of static is; (1.00 P.)

- [A] Lightning
- [B] Noise
- [C] Turbulence
- [D] Cold front

- 39 A radio magnetic Indicator (RMI) displays a warning flag which indicates a compass failure .
The radio bearing pointers; (1.00 P.)
- [A] Can be used to home to an NDB only.
 - [B] Can be used to home to an NDB and a VOR station
 - [C] Cannot be used.
 - [D] Can be used to track to a VOR only.

40 QUJ is the; (1.00 P.)

- [A] Magnetic track from a station to aircraft position.
- [B] True track from a station to the aircraft position.
- [C] Magnetic track the aircraft has to steer to reach a station.
- [D] True track the aircraft has to steer to reach a station.

- 41 Instrument Landing Systems (ILS) Glide Paths provide azimuth coverage (i)° each side of the localiser centre-line to a distance of (ii) NM minimum from the threshold. (1.00 P.)
- [A] (i) 8 (ii) 10
- [B] (i) 25 (ii) 17
- [C] (i) 5 (ii) 8
- [D] (i) 35 (ii) 25

- 42 At 0800 Z a relative bearing of 250° is obtained from an NDB. At 0806 Z a relative bearing of 272° is obtained from the same NDB .

If the aircraft altered heading at 0806 Z to fly directly to the NDB , how long would it take to get to the beacon ? (1.00 P.)

- [A] 12 minutes
- [B] 60 minutes
- [C] 36 minutes
- [D] 16 minutes

- 43 The rate of descent required to maintain a 3.25° glide slope at a groundspeed of 140 kt is approximately: (1.00 P.)
- [A] 760 FT/MIN
 - [B] 850 FT/MIN
 - [C] 670 FT/MIN
 - [D] 700 FT/MIN

- 44 Airborne weather radars are generally based on the use of: (1.00 P.)
- [A] secondary radar in the SHF band
 - [B] primary radar in the SHF band
 - [C] secondary radar in the VHF band
 - [D] primary radar in the UHF band

- 45 An aircraft heading 290° M has an ADF reading of 305° R from an NDB .ATC instructs the pilot to intercept the NDB 020° QDR outbound at an angle of 50° , the intercept heading and relative bearing is;

Intercept heading	Relative bearing (1.00 P.)
[A] 235° M	230°
[B] 330° M	50°
[C] 330° M	230°
[D] 235° M	50°

- 46 The pencil shaped beam of an airborne weather radar is used in preference to the mapping mode for the determination of ground features: (1.00 P.)
- [A] beyond 100 NM because insufficient antenna tilt angle is available with the mapping mode
 - [B] beyond 150 NM because the wider beam gives better definition
 - [C] beyond 50 to 60 NM because more power can be concentrated in the narrower beam
 - [D] when approaching coast-lines in polar regions

- 47 The designation of the HF radio receiver is; (1.00 P.)
- [A] J3S
 - [B] A3B
 - [C] J3E
 - [D] A3A

- 48 Factors liable to affect most NDB/ADF system performance and reliability include: (1.00 P.)
- [A] static interference - station interference - latitude error
 - [B] height error - station interference - mountain effect
 - [C] coastal refraction - lane slip - mountain effect
 - [D] static interference - night effect - absence of failure warning system

- 49 The maximum pulse repetition frequency (PRF) that can be used by a primary radar facility in order to detect targets unambiguously at a range of 50 NM is:
(pps = pulses per second) (1.00 P.)
- [A] 610 pps
 - [B] 3240 pps
 - [C] 713 pps
 - [D] 1620 pps

- 50 When tracking outbound from an NDB with the proper drift correction established, which direction will the head of the ADF bearing pointer be deflected? (1.00 P.)
- [A] To the downwind side of the aircraft's tail.
 - [B] To the windward side of the aircraft's tail.
 - [C] To the windward side of the aircraft's nose.
 - [D] To the downwind side of the aircraft's nose.

- 51 Ignoring pulse length and fly-back, a radar facility designed to have a maximum unambiguous range of 50 km will have a PRF (pulses per second) of: (1.00 P.)
- [A] 6000
 - [B] 3000
 - [C] 330
 - [D] 167

52 ILS glide path 3° TAS 150 kt, headwind component 15 kt.

What is the approximate rate of descent? (1.00 P.)

- [A] 675 ft /min
- [B] 400 ft /min
- [C] 975 ft /min
- [D] 1005 ft/ min

- 53 Which combination of characteristics gives best screen picture in a primary search radar? (1.00 P.)
- [A] long pulse length and narrow beam
 - [B] short pulse length and wide beam
 - [C] long pulse length and wide beam
 - [D] short pulse length and narrow beam

- 54 Inbound to a VOR on a radial 060° you are cleared to hold south of the VOR on 160° radial non- standard pattern.

Which of holding pattern entry should be used? (1.00 P.)

- [A] Teardrop
- [B] Parallel
- [C] Direct
- [D] Offset

- 55 Which of the following lists are all errors that affect the accuracy and reliability of the Satellite-Assisted Navigation system (GNSS/GPS)? (1.00 P.)
- [A] Satellite to ground time lag; atmospheric propagation; satellite clock
 - [B] Satellite clock; satellite ephemeris; atmospheric propagation
 - [C] Satellite mutual interference; satellite ephemeris; atmospheric propagation
 - [D] Satellite mutual interference; frequency drift; satellite to ground time lag

- 56 What is the full scale deflection of the CDI when tuned to a localiser ? (1.00 P.)
- [A] 5° either side of course
 - [B] 10° either side of course
 - [C] 2.5° either side of course
 - [D] 7.5° either side of course

- 57 In ISA conditions, approximately what is the maximum theoretical range at which an aircraft at FL210 may expect to receive signals from a VOR facility sited 340 feet above mean sea level ? (1.00 P.)
- [A] 183 NM
 - [B] 204 NM
 - [C] 245 NM
 - [D] 163 NM

- 58 What are the normal minimums for a CAT 1 ILS approach with all components operative? (1.00 P.)
- [A] RVR 600 m and a Decision height of 100 ft
 - [B] RVR 600 m and a Decision height of 300 ft
 - [C] RVR 600 m and a Decision height of 400 ft
 - [D] RVR 600 m and a Decision height of 200 ft

- 59 What are the modulation frequencies of the two overlapping lobes that are used on an ILS approach? (1.00 P.)
- [A] 63 mHZ 123 mHZ
 - [B] 328mHZ 335 mHZ
 - [C] 90 HZ 150 HZ
 - [D] 75kHz 135 kHz

- 60 Amplitude modulated at frequency 10 KHZ carried on a transmitted frequency 5 MHZ produces; (1.00 P.)
- [A] 2 sidebands of transmission at 4990 Khz and 500 Khz
 - [B] 2 sidebands of transmission at 5010 Khz and 4990 Khz
 - [C] 2 sidebands of transmissions at 510 Khz and 510 Mhz
 - [D] 2 sidebands of transmission at 510 Khz and 5000 Khz

- 61 An aircraft is flying a 3° glidepath and experiences a reduction in groundspeed from 150 kt at the outer marker to 120 kt over the threshold. The effect of this change in groundspeed on the aircraft's rate of descent will be a decrease of approximately: (1.00 P.)
- [A] 50 FT/MIN
 - [B] 100 FT/MIN
 - [C] 150 FT/MIN
 - [D] 250 FT/MIN

- 62 If the wavelength is 8 cm, the radio frequency is; (1.00 P.)
- [A] 37.5 MHZ
 - [B] 3.75 GHZ
 - [C] 375 MHZ
 - [D] 37.5 GHZ

- 63 The minimum range of a primary radar, using the pulse technique, is determined by the (i)..... ; the maximum unambiguous range by the (ii)..... (1.00 P.)
- [A] (i) pulse length (ii) pulse recurrence frequency
 - [B] (i) transmission frequency (ii) transmitter power output
 - [C] (i) pulse length (ii) length of the timebase
 - [D] (i) transmission frequency (ii) pulse recurrence frequency

- 64 An aircraft is on a true bearing of 216° from a VOR station .The variation at the station is 10° E and at the aircraft is 8° E, what is the phase difference between the reference and the variable signals arriving in the aircraft's receiver? (1.00 P.)
- [A] 200°
 - [B] 206°
 - [C] 226°
 - [D] 216°

- 65 Due to 'Doppler' effect an apparent decrease in the transmitted frequency, which is proportional to the transmitter's velocity, will occur when: (1.00 P.)
- [A] the transmitter moves toward the receiver
 - [B] there is no relative movement between the transmitter and the receiver
 - [C] the transmitter and receiver move towards each other
 - [D] the transmitter moves away from the receiver

- 66 A non-directional beacon transmits; (1.00 P.)
- [A] Vertically polarised signals in the LF band.
 - [B] Horizontally polarised signals in the MF band
 - [C] Vertically polarised signals in the MF band.
 - [D] Horizontally polarised signals in the LF band.

- 67 Signal reception is required from a minimum number of satellites that have adequate elevation and suitable geometry in order for a Satellite-Assisted Navigation System (GNSS/GPS) to carry out independent three dimensional operation, Receiver Autonomous Integrity Monitoring (RAIM) and to isolate any faulty satellite and remove it from contributing to the navigation solution. The number of satellites is: (1.00 P.)

[A] 5

[B] 4

[C] 7

[D] 6

68 An aircraft is heading 160°T , variation is 5°W . An NDB bears 110°R .

What is the QDM of the aircraft? (1.00 P.)

[A] 270° T

[B] 090° T

[C] 275° M

[D] 095° M

- 69 A ground radar transmitting at a PRF of 1200 pulses/second will have a maximum unambiguous range of approximately: (1.00 P.)
- [A] 67 NM
 - [B] 270 NM
 - [C] 27 NM
 - [D] 135 NM

- 70 An aircraft is homing to a VOR whose variation is 5°W . The aircraft's position variation is 4°W .

What is the initial heading if the aircraft maintains radial 253° and has a drift of 8°P ? (1.00 P.)

- [A] 073°M
- [B] 250°M
- [C] 081°M
- [D] 065°M

- 71 The principle of operation of an ILS localiser transmitter is based on two overlapping lobes that are transmitted on (i)..... frequencies and carry different (ii)..... (1.00 P.)
- [A] (i) the same (ii) phases
 - [B] (i) different (ii) phases
 - [C] (i) different (ii) modulation frequencies
 - [D] (i) the same (ii) modulation frequencies

- 72 Failure warning flag of the radio altimeter appears when; (1.00 P.)
- [A] Reflections are received from the airframe of the aircraft.
 - [B] The aircraft descends below 500 ft
 - [C] There is a signal transmission fault
 - [D] Altitude exceeds 2500 ft

- 73 Signal reception is required from a minimum number of satellites that have adequate elevation and suitable geometry in order for a Satellite-Assisted Navigation System (GPS) to carry out independent three dimensional operation without the Receiver Autonomous Integrity Monitoring (RAIM) function. The number of satellites is: (1.00 P.)
- [A] 3
 - [B] 5
 - [C] 4
 - [D] 6

- 74 If the 5 dot CDI is 1 (ONE) dot to the left with 090 selected in the OBS and the FROM flag is showing, what radial is the aeroplane on? (1.00 P.)
- [A] 272°
 - [B] 268°
 - [C] 092°
 - [D] 088°

- 75 Where, in relation to the runway, is the ILS localiser transmitting aerial normally situated? (1.00 P.)
- [A] At the non-approach end about 150 m to one side of the runway and 300 m along the extended centreline
 - [B] At the approach end about 150 m to one side of the runway and 300 m from touchdown
 - [C] On the non-approach end of the runway about 300 m from the runway on the extended centreline
 - [D] At the approach end of the runway about 300 m from touchdown on the centreline

76 The BLUE sector of the ILS approach path is modulated at; (1.00 P.)

- [A] 90 Hz
- [B] 110 Hz
- [C] 50 Hz
- [D] 150 Hz

- 77 In which mode of operation does the aircraft weather radar use a cosecant radiation pattern. (1.00 P.)
- [A] CONTOUR
 - [B] WEATHER
 - [C] MAPPING
 - [D] MANUAL

- 78 What alert signal is given on the GPWS Mode 3 to indicate a negative rate climb after take off or go around? (1.00 P.)
- [A] Glide slope
 - [B] Whoop whoop pull up
 - [C] Don't sink
 - [D] Terrain terrain

- 79 There are two NDBs, one 20 NM inland, and the other 50 NM inland from the coast.
Assuming that the error caused by coastal refraction is the same for both propagations, the extent of the error in a position line plotted by an aircraft that is over water will be: (1.00 P.)
- [A] the same from both beacons when the aircraft is on a relative bearing of 090° and 270°
 - [B] greater from the beacon that is 50 NM inland
 - [C] greater from the beacon that is 20 NM inland
 - [D] the same from both beacons when the aircraft is on a relative bearing of 180° and 360°

- 80 A radar has a maximum range of 180 NM. What is its Pulse Recurrence Frequency? (1.00 P.)
- [A] 900 PPS
 - [B] 137 PPS
 - [C] 274 PPS
 - [D] 450 PPS

- 81 Given:
 True track 180°
 Drift 8°R
 Compass heading 195°
 Deviation -2°
 Calculate the variation. (1.00 P.)
- [A] 5°W
[B] 25°W
[C] 9°W
[D] 21°W

- 82 An aircraft flying at an altitude of 6000 ft AGL picks a cloud formation on the weather radar at a range of 45 NM. At a tilt angle of $+5^\circ$ the cloud just disappears from the radar display. The beam width is 4° .

What is the height of the cloud top from the ground level? (1.00 P.)

- [A] 19680 ft
- [B] 26000 ft
- [C] 13680 ft
- [D] 6000 ft

- 83 The radio altimeter works on the principle of; (1.00 P.)
- [A] Frequency modulation
 - [B] Phase difference
 - [C] Amplitude modulation
 - [D] Phase modulation

- 84 Compass deviation is defined as the angle between: (1.00 P.)
- [A] True North and Compass North
 - [B] Magnetic North and Compass North
 - [C] True North and Magnetic North
 - [D] the horizontal and the total intensity of the earth's magnetic field

- 85 Given:
True course 300°
drift 8°R
variation 10°W
deviation -4°
Calculate the compass heading. (1.00 P.)
- [A] 306°
[B] 294°
[C] 278°
[D] 322°

- 86 If a DME beacon becomes saturated, it adjusts itself to give preference to; (1.00 P.)
- [A] Maximum of 27 aircraft irrespective of distance
 - [B] The nearest aircraft
 - [C] The farthest aircraft
 - [D] Those aircraft that send signals faster irrespective of distance

- 87 Given:
 true track 352°
 variation 11° W
 deviation is -5°
 drift 10° R.
 Calculate the compass heading? (1.00 P.)
- [A] 018°
[B] 358°
[C] 025°
[D] 346°

88 A receiver is moving away from a stationary transmitter at a speed of 380 m/s.

If the transmission wavelength is 4.3 cm, what is the Doppler frequency? (1.00 P.)

[A] 8.8372 kHz

[B] 88.372 Hz

[C] 7 GHZ

[D] 883.72 Hz

- 89 Given:
 true track 070°
 variation 30°W
 deviation $+1^\circ$
 drift 10°R
 Calculate the compass heading? (1.00 P.)
- [A] 091°
[B] 089°
[C] 100°
[D] 101°

- 90 What determines the maximum range of a radar set? (1.00 P.)
- [A] Pulse Recurrence Period
 - [B] Transmission frequency
 - [C] Pulse width
 - [D] Pulse Recurrence Frequency

91 The angle between True North and Magnetic North is called: (1.00 P.)

[A] compass error

[B] variation

[C] deviation

[D] drift

- 92 What is the meaning of the term 'Radial ' with respect to VOR? (1.00 P.)
- [A] The True heading to a VOR station
 - [B] The magnetic bearing to a VOR station.
 - [C] The magnetic bearing from the VOR station
 - [D] The True heading from the VOR station

- 93 The frequency of a radio altimeter is; (1.00 P.)
- [A] 4300 MHz EHF
 - [B] 4250 MHz VHF
 - [C] 4300 MHz SHF
 - [D] 4250 MHz UHF

- 94 Deviation applied to magnetic heading gives: (1.00 P.)
- [A] magnetic track
 - [B] magnetic course
 - [C] compass heading
 - [D] true heading

95 A nautical mile is: (1.00 P.)

[A] 1609 metres

[B] 1012 metres

[C] 1852 metres

[D] 1500metres

- 96 The middle marker (MM) of an ILS system produces the following audio and visual indications; (1.00 P.)
- [A] Alternate dots and dashes with an amber light
 - [B] Alternate dots and dashes with a blue light.
 - [C] Dots with amber light
 - [D] Dashes with blue light

- 97 An aircraft flies the following rhumb line tracks and distances from position 04°00'N 030°00'W:
600 NM South,
then 600 NM East,
then 600 NM North,
then 600 NM West.
The final position of the aircraft is: (1.00 P.)
- [A] 04°00'N 030°00'W
 - [B] 03°58'N 030°02'W
 - [C] 04°00'N 030°02'W
 - [D] 04°00'N 029°58'W

- 98 The critical angle of a sky wave transmission is defined as the angle between the:
(1.00 P.)
- [A] Vertical at the receiver and a skywave.
 - [B] Vertical at the receiver and the first skywave.
 - [C] Vertical at the transmitter and the first skywave.
 - [D] Horizontal at the transmitter and the first skywave.

- 99 What is the final position after the following rhumb line tracks and distances have been followed from position 60°00'N 030°00'W?
South for 3600 NM,
East for 3600 NM,
North for 3600 NM,
West for 3600 NM.
The final position of the aircraft is: (1.00 P.)
- [A] 59°00'N 060°00'W
 - [B] 59°00'N 090°00'W
 - [C] 60°00'N 090°00'W
 - [D] 60°00'N 030°00'E

- 100 A DME beacon is normally capable of replying to a maximum of aircraft. The approximate number is: (1.00 P.)
- [A] 120
 - [B] 20
 - [C] 100
 - [D] 150

- 101 Which of the following properties is NOT required by " TOPOS" in relation to Topographical maps ? (1.00 P.)
- [A] All bearings must be correct
 - [B] Adjacent sheets fit accurately.
 - [C] Scale fairly constant and any scale error distributed evenly.
 - [D] Shapes are shown fairly correctly

- 102 Given:
TAS = 270 kt,
True HDG = 270°,
Actual wind 205°(T)/30kt,
Calculate the drift angle and GS? (1.00 P.)
- [A] 6L - 256kt
[B] 6R - 251kt
[C] 8R - 259kt
[D] 6R - 259kt
- 103 Given:
TAS = 270 kt,
True HDG = 145°,
Actual wind = 205°(T)/30kt.
Calculate the drift angle and GS? (1.00 P.)
- [A] 6°L - 256 kt
[B] 6°R - 251 kt
[C] 8°R - 261 kt
[D] 6°R - 259 kt

104 Which of the following is NOT an expression of Chart Scale? (1.00 P.)

- [A] Representative fraction
- [B] Statement in words
- [C] Latitudinal Scale
- [D] Graduated Scale Line

- 105 Given:
TAS = 470 kt,
True HDG = 317°
W/V = 045°(T)/45kt
Calculate the drift angle and GS? (1.00 P.)
- [A] 5°L - 475 kt
 - [B] 5°L - 470 kt
 - [C] 3°R - 470 kt
 - [D] 5°R - 475 kt

106 Which of the following is true about the Mercator's projection? (1.00 P.)

- [A] The point of tangency is the equator
- [B] scale is constant from Equator to the Poles
- [C] It is an equal area projection
- [D] Great Circles are straight lines

- 107 Given:
TAS = 140 kt,
True HDG = 302°,
W/V = 045°(T)/45kt
Calculate the drift angle and GS? (1.00 P.)
- [A] 9°R - 143 kt
[B] 16°L - 156 kt
[C] 9°L - 146 kt
[D] 18°R - 146 kt
- 108 Given:
TAS = 290 kt,
True HDG = 171°,
W/V = 310°(T)/30kt
Calculate the drift angle and GS? (1.00 P.)
- [A] 4°R - 314 kt
[B] 4°L - 314 kt
[C] 4°L - 310 kt
[D] 4°R - 310 kt

- 109 In relation to the Lamberts Projection which of the following statements is FALSE? (1.00 P.)
- [A] It is assumed that the parallel of origin is midway between the standard parallels.
 - [B] The scale is only correct at the standard parallels.
 - [C] The scale contracts outside the standard parallels.
 - [D] The meridians of longitude and parallels of latitude cut at right angles.
- 110 Which of the following is NOT a characteristic of an orthomorphic chart? (1.00 P.)
- [A] Meridians and parallel cut at 90o
 - [B] Straight lines - both great circles and rhumb lines as straight lines.
 - [C] Bearings - similar to bearings on earth.
 - [D] Scale must be correct in all directions at any one point.

- 111 Given:
TAS = 485 kt,
True HDG = 226°,
W/V = 110°(T)/95kt.
Calculate the drift angle and GS? (1.00 P.)
- [A] 7°R - 531 kt
 - [B] 9°R - 433 kt
 - [C] 9°R - 533 kt
 - [D] 8°L - 435 kt

112 Which of the following projections is Mathematical in construction? (1.00 P.)

- [A] Polar Sterographic
- [B] Transverse Mercators
- [C] Lambert_s Orthomorphic
- [D] Mercators

- 113 Given:
TAS = 472 kt,
True HDG = 005°,
W/V = 110°(T)/50kt.
Calculate the drift angle and GS. (1.00 P.)
- [A] 6°R/490 kt
 - [B] 6°L/402 kt
 - [C] 6°L/490 kt
 - [D] 6°R/462 kt

- 114 Given:
TAS = 190 kt,
True HDG = 085°,
W/V = 110°(T)/50kt.
Calculate the drift angle and GS? (1.00 P.)
- [A] 4°L - 168 kt
 - [B] 8°L - 146 kt
 - [C] 4°L - 145 kt
 - [D] 7°L - 156 kt

115 According to Kepler's law, the Earth is closest to the sun during (1.00 P.)

- [A] Perihelion
- [B] Aphelion
- [C] Solstice
- [D] Equinox

- 116 Given:
TAS = 132 kt,
True HDG = 257°
W/V = 095° (T)/35kt.
Calculate the drift angle and GS? (1.00 P.)
- [A] 4° L - 167 kt
 - [B] 2° R - 166 kt
 - [C] 3° L - 166 kt
 - [D] 4° R - 165 kt

117 In Navigation Plotting the symbol----->>----- denotes (1.00 P.)

- [A] Track made good between two ground positions
- [B] Heading and ground speed
- [C] Wind velocity
- [D] Track and ground speed.

118 Given:

TAS = 370 kt,

True HDG = 181°,

W/V = 095°(T)/35kt.

Calculate the true track and GS? (1.00 P.)

[A] 189 - 370 kt

[B] 192 - 370 kt

[C] 176 - 370 kt

[D] 186 - 370 kt

119 The value of Chart Convergency in a mercator chart is (1.00 P.)

- [A] d. long x Cos latitude
- [B] Zero
- [C] d.long x Sin mean latitude
- [D] d. long x Sin. Parallel of Origin

- 120 The rhumbline track from P to Q in the Southern Hemisphere is 079° (T) if the convergency between P and Q is 6° , find the great circle bearing from Q to P. (1.00 P.)
- [A] 262°
 - [B] 256°
 - [C] 265°
 - [D] 250°

- 121 Given:
TAS = 375 kt,
True HDG = 124°,
W/V = 130°(T)/55kt.
Calculate the true track and GS? (1.00 P.)
- [A] 123 - 320 kt
 - [B] 125 - 322 kt
 - [C] 125 - 318 kt
 - [D] 126 - 320 kt
-
- 122 Given:
TAS = 125 kt,
True HDG = 355°,
W/V = 320°(T)/30kt.
Calculate the true track and GS? (1.00 P.)
- [A] 005 - 102 kt
 - [B] 348 - 102 kt
 - [C] 002 - 98 kt
 - [D] 345 - 100 kt

- 123 A straight line drawn on a chart measures 14.1 inches and represents 275 Nm on the earth.

The scale of this chart is: (1.00 P.)

- [A] 14: 275
- [B] 1: 7652961
- [C] 1:1422 979
- [D] 1:1235746

- 124 Chart R has a scale of 1:300,000. Chart S has a scale of 1:150,000 which of these statements is correct? (1.00 P.)
- [A] Chart A has a larger scale because earth distance is larger
 - [B] Chart R has a larger scale because earth distance is smaller.
 - [C] Chart S has a larger scale because earth distance is smaller.
 - [D] Chart S has a larger scale because earth distance is large.

- 125 Given:
TAS = 198 kt,
HDG ($^{\circ}$ T) = 180,
W/V = 359/25.
Calculate the Track($^{\circ}$ T) and GS? (1.00 P.)
- [A] 179 - 220 kt
 - [B] 180 - 183 kt
 - [C] 181 - 180 kt
 - [D] 180 - 223 kt

- 126 Using your CRP 5 work out the Heading and Ground Speed given the following data.

W\V 045/32 Kt

TAS 215kts

Track 096o (1.00 P.)

[A] 102o/37 kts

[B] 090o/194 kts

[C] 102o/196 kts.

[D] 090o/237 kts

- 127 Given:
TAS = 135 kt,
HDG ($^{\circ}$ T) = 278,
W/V = 140/20kt
Calculate the Track ($^{\circ}$ T) and GS? (1.00 P.)
- [A] 275 - 150 kt
 - [B] 279 - 152 kt
 - [C] 272 - 121 kt
 - [D] 283 - 150 kt

- 128 What is the maximum Theoretical Range at which a VOR should be received by an aircraft at FL 230? Assume the VOR is at pressure altitude 5000 ft. (1.00 P.)
- [A] 101 Nm
 - [B] 150 Nm
 - [C] 282 Nm
 - [D] 278 Nm

- 129 Given:
TAS = 225 kt,
HDG ($^{\circ}$ T) = 123° ,
W/V = 090/60kt.
Calculate the Track ($^{\circ}$ T) and GS? (1.00 P.)
- [A] 128 - 180 kt
 - [B] 134 - 188 kt
 - [C] 134 - 178 kt
 - [D] 120 - 190 kt

- 130 When the time is 0745 LMT at a place 65° 45' W, what is the time UTC is (1.00 P.)
- [A] 0322 UTC
 - [B] 1208 UTC
 - [C] 0745 UTC
 - [D] 0953 UTC

- 131 Given:
TAS = 480 kt,
HDG ($^{\circ}$ T) = 040° ,
W/V = 090/60kt.
Calculate the Track ($^{\circ}$ T) and GS? (1.00 P.)
- [A] 034 - 445 kt
 - [B] 028 - 415 kt
 - [C] 036 - 435 kt
 - [D] 032 - 425 kt

- 132 Given:
TAS = 155 kt,
HDG (T) = 216° ,
W/V = 090/60kt.
Calculate the Track ($^{\circ}$ T) and GS. (1.00 P.)
- [A] 224 - 175 kt
 - [B] 222 - 181 kt
 - [C] 231 - 196 kt
 - [D] 226 - 186 kt

133 The great circle track from A ($20^{\circ}00'N$ $10^{\circ}00'W$) to B ($40^{\circ}00'N$ $10^{\circ}00'E$) is 060(T).

The great circle track from B to A is: (1.00 P.)

[A] 230(T)

[B] 245(T)

[C] 240(T)

[D] 250(T)

134 Sunrise or Sunset in the air almanac occur when (1.00 P.)

- [A] The sun's centre is on the horizon
- [B] During evening or morning twilights.
- [C] The sun's lower limb is on the horizon
- [D] The sun's upper limb is on the horizon

- 135 Given:
TAS = 235 kt,
HDG (T) = 076°
W/V = 040/40kt.
Calculate the drift angle and GS? (1.00 P.)
- [A] 7L - 269 kt
 - [B] 5R - 207 kt
 - [C] 7R - 204 kt
 - [D] 5L - 255 kt

136 On a Lambert Conformal Chart a rhumbline is a (1.00 P.)

- [A] Curve concave to the P of O
- [B] Curve concave to the equator.
- [C] Curve concave to the nearer pole
- [D] Straight line

- 137 Given:
TAS = 440 kt,
HDG (T) = 349°
W/V = 040/40kt.
Calculate the drift and GS? (1.00 P.)
- [A] 6L - 395 kt
 - [B] 4L - 415 kt
 - [C] 5L - 385 kt
 - [D] 2L - 420 kt
-
- 138 Given:
TAS = 465 kt,
HDG (T) = 124°,
W/V = 170/80kt.
Calculate the drift and GS? (1.00 P.)
- [A] 8L - 415 kt
 - [B] 6L - 400 kt
 - [C] 4L - 400 kt
 - [D] 3L - 415 kt

- 139 Of the following methods of showing relief on topographical charts, which one uses a series of short lines? (1.00 P.)
- [A] Hachures
 - [B] Spot heights
 - [C] Contours
 - [D] Layer tinting

- 140 Given:
TAS = 95 kt,
HDG (T) = 075°,
W/V = 310/20kt.
Calculate the drift and GS? (1.00 P.)
- [A] 10L - 104 kt
 - [B] 8R - 104 kt
 - [C] 9L - 105 kt
 - [D] 9R - 108 kt

- 141 The chart length between points X and Y is 20 inches on a chart of scale 1:550,000.
The flight time is 22 minutes. What is the approximate ground speed? (1.00 P.)
- [A] 280 kts
 - [B] 450 kts.
 - [C] 350 kts
 - [D] 410 kts

- 142 Given:
TAS = 140 kt,
HDG (T) = 005°,
W/V = 265/25kt.
Calculate the drift and GS? (1.00 P.)
- [A] 11R - 140 kt
 - [B] 11R - 142 kt
 - [C] 9R - 140 kt
 - [D] 10R - 146 kt

- 143 Taking the circumference of the earth as 21600 Nm at the Equator, what is the distance between two longitudes two degrees apart at 75° N or S of the Equator? (1.00 P.)
- [A] 116 NM
 - [B] 120 NM
 - [C] 100 NM
 - [D] 31 NM

- 144 On a Lambert Conformal Chart a straight line joining position A (Longitude 20°E) to C (Longitude 15°W) passes through position B. The direction of the line is 260° (T) at A and 272° at B. If chart convergence factor is 0.8, what are the true rhumbline tracks from A to B and from A to C.

A to B	A to (1.00 P.)
[A] 258	270
[B] 266	274
[C] 246	280
[D] 254	246

- 145 Given:
TAS = 190 kt,
HDG (T) = 355°,
W/V = 165/25kt.
Calculate the drift and GS? (1.00 P.)

[A] 1R - 165 kt
[B] 1R - 175 kt
[C] 1L - 215 kt
[D] 1L - 225 kt

- 146 Given:
TAS = 230 kt,
HDG (T) = 250°,
W/V = 205/10kt.
Calculate the drift and GS? (1.00 P.)

[A] 2R - 223 kt
[B] 1R - 221 kt
[C] 2L - 224 kt
[D] 1L - 225 kt

147 Which of the following is not a method of finding conversion angle? (1.00 P.)

- [A] ABAC scale on maps
- [B] Douglas Protractor
- [C] Ch long * sine mean latitude
- [D] $\frac{1}{2}$ ch long * sine means latitude

- 148 Given:
TAS = 205 kt,
HDG (T) = 180°,
W/V = 240/25kt.
Calculate the drift and GS? (1.00 P.)
- [A] 4L - 195 kt
 - [B] 7L - 192 kt
 - [C] 3L - 190 kt
 - [D] 6L - 194 kt

- 149 From Q (40° 00'N 05° 00' E) an aircraft flies a great circle track of 180° T for 600 nm to R. It then turns onto a rhumbline track of 090°(T) and flies for 455 nm to S. The longitude of S is (1.00 P.)
- [A] 23°46'W
 - [B] 02°14'E
 - [C] 13°46'E
 - [D] 03°14'W

- 150 Given:
TAS = 250 kt,
HDG (T) = 029°,
W/V = 035/45kt.
Calculate the drift and GS? (1.00 P.)
- [A] 1R - 205 kt
 - [B] 1L - 265 kt
 - [C] 1L - 205 kt
 - [D] 1R - 295 kt

151 Which of the following statements is true in relation to convergency? (1.00 P.)

- [A] It is the angle of inclination between two parallels of latitude.
- [B] The formula for convergency is $\text{ch long} * \cos \text{mean latitude}$.
- [C] At the Equator, convergency is equal to change of longitude.
- [D] The amount of convergency depends on the latitude.

- 152 Given:
TAS = 132 kt,
HDG (T) = 053°,
W/V = 205/15kt.
Calculate the Track (°T) and GS? (1.00 P.)
- [A] 051 - 144 kt
 - [B] 057 - 144 kt
 - [C] 052 - 143 kt
 - [D] 050 - 145 kt

- 153 Isoclinals are lines on a chart that (1.00 P.)
- [A] join points having equal magnetic dip
 - [B] join points having equal variation
 - [C] are also known as isogonic lines.
 - [D] are irregular and join areas where there is no variation

- 154 Given:
TAS = 90 kt,
HDG (T) = 355°,
W/V = 120/20kt.
Calculate the Track (°T) and GS? (1.00 P.)
- [A] 359 - 102 kt
[B] 006 - 95 kt
[C] 346 - 102 kt
[D] 358 - 101 kt
- 155 Given:
TAS = 485 kt,
HDG (T) = 168°,
W/V = 130/75kt.
Calculate the Track (°T) and GS? (1.00 P.)
- [A] 175 - 432 kt
[B] 175 - 420 kt
[C] 173 - 424 kt
[D] 174 - 428 kt
- 156 Given:
TAS = 155 kt,
Track (T) = 305°,
W/V = 160/18kt.
Calculate the HDG (°T) and GS? (1.00 P.)
- [A] 301 - 169 kt
[B] 309 - 170 kt
[C] 309 - 141 kt
[D] 305 - 169 kt

- 157 Which one of the following is not a classification of projections according to Properties that it has? (1.00 P.)
- [A] Equal area
 - [B] Orthomorphic
 - [C] Zenithal
 - [D] Equi distance

- 158 In relation to aircraft positions which of the following statements is correct? (1.00 P.)
- [A] A pinpoint is the ground position of the aircraft obtained by direct observation of the ground.
 - [B] Both B and C are correct.
 - [C] DR position is the position directly beneath the aircraft
 - [D] An air position is the current position of the aircraft.

- 159 Given:
TAS = 130 kt,
Track (T) = 003°,
W/V = 190/40kt.
Calculate the HDG (°T) and GS? (1.00 P.)
- [A] 357 - 168 kt
 - [B] 359 - 166 kt
 - [C] 002 - 173 kt
 - [D] 001 - 170 kt

- 160 On a Mercator Chart what bearing is to be plotted given a Radio bearing? (1.00 P.)
- [A] Great Circle bearing
 - [B] Compass bearing
 - [C] Rhumbline bearing
 - [D] Magnetic bearing.

- 161 Given:
TAS = 227 kt,
Track (T) = 316° ,
W/V = 205/15kt.
Calculate the HDG ($^\circ$ T) and GS? (1.00 P.)
- [A] 310 - 233 kt
 - [B] 311 - 230 kt
 - [C] 313 - 235 kt
 - [D] 312 - 232 kt

- 162 Given:
TAS = 465 kt,
Track (T) = 007° ,
W/V = 300/80kt.
Calculate the HDG ($^\circ$ T) and GS? (1.00 P.)
- [A] 357 - 502 kt
 - [B] 001 - 435 kt
 - [C] 358 - 428 kt
 - [D] 017 - 490 kt

- 163 On a Mercator Chart given a VOR bears 075 o (M)TO, the convergency is 8o , the deviation is 6o E variation is 15o W at the station . What is the bearing to plot in the Southern hemisphere? (1.00 P.)
- [A] 266o T
 - [B] 274o T
 - [C] 244o T
 - [D] 236o T

- 164 Given:
TAS = 200 kt,
Track (T) = 073° ,
W/V = 210/20kt.
Calculate the HDG ($^\circ$ T) and GS? (1.00 P.)
- [A] 077 - 214 kt
 - [B] 079 - 211 kt
 - [C] 075 - 213 kt
 - [D] 077 - 210 kt

- 165 In a Lambert Conformal Chart convergency equals earth convergency at the :
(1.00 P.)
- [A] Standard Parallels
 - [B] Equator.
 - [C] Poles
 - [D] P of O

166 Which of the following is true of a great circle ? (1.00 P.)

- [A] The smaller arc of it represents the shortest distance between two points on the earth.
- [B] All the options are true.
- [C] It is the path radio waves follow over the earth.
- [D] Its plane passes through the centre of the earth.

- 167 Given:
TAS = 200 kt,
Track (T) = 110°,
W/V = 015/40kt.
Calculate the HDG (°T) and GS? (1.00 P.)
- [A] 121 - 207 kt
 - [B] 097 - 201 kt
 - [C] 099 - 199 kt
 - [D] 121 - 199 kt

168 The scale on a Mercator Chart: (1.00 P.)

- [A] Varies with change in latitude.
- [B] Remains constant with change of latitude
- [C] Varies with longitude
- [D] Remains constant with change of either latitude or longitude.

- 169 Given:
TAS = 270 kt,
Track (T) = 260°,
W/V = 275/30kt.
Calculate the HDG (°T) and GS? (1.00 P.)
- [A] 262 - 237 kt
 - [B] 264 - 237 kt
 - [C] 264 - 241 kt
 - [D] 262 - 241 kt

- 170 Which of the following is true in relation to traverse Mercator Charts? (1.00 P.)
- [A] Use a particular meridian central to the area depicted as its datum.
 - [B] Can only be used in the vicinity of the Equator
 - [C] Rhumb lines are straight lines.
 - [D] Will present the shape of surface features accurately provided a large areas and a small scale is used.

- 171 Given:
True HDG = 307° ,
TAS = 230 kt,
Track (T) = 313° ,
GS = 210 kt.
Calculate the W/V? (1.00 P.)
- [A] 255/25kt
 - [B] 260/30kt
 - [C] 257/35kt
 - [D] 265/30kt

- 172 The scale of a chart is 1: 750,000 at the Equator.
The Chart length to the nearest inch between meridians 7° apart at the equator is :
(1.00 P.)
- [A] 41
 - [B] 6
 - [C] 22
 - [D] 63

- 173 Given:
True HDG = 233° ,
TAS = 480 kt,
Track (T) = 240° ,
GS = 523 kt.
Calculate the W/V? (1.00 P.)
- [A] 110/75kt
 - [B] 105/75kt
 - [C] 110/80kt
 - [D] 115/70kt

- 174 The scale of chart is 1:254,000 the chart length to the nearest cm which represents 100 Nm on the earth is : (1.00 P.)
- [A] 73
 - [B] 7
 - [C] 3
 - [D] 29

- 175 Given:
True HDG = 133° ,
TAS = 225 kt,
Track (T) = 144° ,
GS = 206 kt.
Calculate the W/V? (1.00 P.)
- [A] 075/45kt
 - [B] 070/45kt
 - [C] 070/40kt
 - [D] 075/50kt

- 176 Given:
True HDG = 074° ,
TAS = 230 kt,
Track (T) = 066° ,
GS = 242 kt.
Calculate the W/V? (1.00 P.)
- [A] 180/30kt
 - [B] 185/35kt
 - [C] 180/35kt
 - [D] 180/40kt

- 177 The latitude of a plane is its angular distance (1.00 P.)
- [A] E/W of the Equator to a maximum of 90° E/W.
 - [B] E/W of the Equator to a maximum of 180° E/W
 - [C] N/S of the Equator to a maximum of 90° N/S.
 - [D] N/S of the Equator to a maximum of 180° N/S

- 178 Given:
True HDG = 206° ,
TAS = 140 kt,
Track (T) = 207° ,
GS = 135 kt.
Calculate the W/V? (1.00 P.)
- [A] 000/10kt
[B] 000/05kt
[C] 180/10kt
[D] 180/05kt
- 179 Given:
True HDG = 054° ,
TAS = 450 kt,
Track (T) = 059° ,
GS = 416 kt.
Calculate the W/V? (1.00 P.)
- [A] 010/50kt
[B] 005/50kt
[C] 010/55kt
[D] 010/45kt
- 180 Given:
True HDG = 145° ,
TAS = 240 kt,
Track (T) = 150° ,
GS = 210 kt.
Calculate the W/V? (1.00 P.)
- [A] 360/35kt
[B] 180/35kt
[C] 295/35kt
[D] 115/35kt

- 181 Given:
True HDG = 002° ,
TAS = 130 kt,
Track (T) = 353° ,
GS = 132 kt.
Calculate the W/V? (1.00 P.)
- [A] 090/15kt
[B] 095/25kt
[C] 095/20kt
[D] 090/20kt
- 182 Given:
True HDG = 035° ,
TAS = 245 kt,
Track (T) = 046° ,
GS = 220 kt.
Calculate the W/V? (1.00 P.)
- [A] 335/55kt
[B] 340/50kt
[C] 340/45kt
[D] 335/45kt
- 183 Given:
course required = 085° (T),
Forecast W/V 030/100kt,
TAS = 470 kt,
Distance = 265 NM.
Calculate the true HDG and flight time? (1.00 P.)
- [A] 096° , 29 MIN
[B] 076° , 34 MIN
[C] 095° , 31 MIN
[D] 075° , 39 MIN

184 Given:

True course from A to B = 090° ,

TAS = 460 kt,

W/V = 360/100kt,

Average variation = 10°E ,

Deviation = -2° .

Calculate the compass heading and GS? (1.00 P.)

[A] 070° - 453 kt

[B] 069° - 448 kt

[C] 068° - 460 kt

[D] 078° - 450 kt

- 185 For a landing on runway 23 (227° magnetic) surface
W/V reported by the ATIS is 180/30kt.
VAR is 13° E.
Calculate the cross wind component? (1.00 P.)
- [A] 15 kt
 - [B] 20 kt
 - [C] 26 kt
 - [D] 22 kt
- 186 Given:
Maximum allowable tailwind component for landing 10 kt.
Planned runway 05 (047° magnetic).
The direction of the surface wind reported by ATIS 210° .
Variation is 17° E.
Calculate the maximum allowable wind speed that can
be accepted without exceeding the tailwind limit? (1.00 P.)
- [A] 18 kt
 - [B] 15 kt
 - [C] 8 kt
 - [D] 11 kt
- 187 Given:
Maximum allowable crosswind component is 20 kt.
Runway 06, RWY QDM 063° (M).
Wind direction 100° (M)
Calculate the maximum allowable wind speed? (1.00 P.)
- [A] 26 kt
 - [B] 33 kt
 - [C] 37 kt
 - [D] 25 kt

- 188 Given:
True course A to B = 250°
Distance A to B = 315 NM
TAS = 450 kt.
W/V = $200^\circ/60$ kt.
ETD A = 0650 UTC.
What is the ETA at B? (1.00 P.)
- [A] 0716 UTC
[B] 0736 UTC
[C] 0730 UTC
[D] 0810 UTC
- 189 Given: GS = 510 kt.
Distance A to B = 43 NM
What is the time (MIN) from A to B? (1.00 P.)
- [A] 4
[B] 5
[C] 7
[D] 6
- 190 Given: GS = 122 kt.
Distance from A to B = 985 NM.
What is the time from A to B? (1.00 P.)
- [A] 7 HR 49 MIN
[B] 8 HR 04 MIN
[C] 8 HR 10 MIN
[D] 7 HR 48 MIN

- 191 Given: GS = 236 kt.
Distance from A to B = 354 NM
What is the time from A to B? (1.00 P.)
- [A] 1 HR 30 MIN
 - [B] 1 HR 09 MIN
 - [C] 1 HR 40 MIN
 - [D] 1 HR 10 MIN
- 192 Given: GS = 435 kt.
Distance from A to B = 1920 NM.
What is the time from A to B? (1.00 P.)
- [A] 3 HR 26 MIN
 - [B] 3 HR 25 MIN
 - [C] 4 HR 25 MIN
 - [D] 4 HR 10 MIN
- 193 Given: GS = 345 kt.
Distance from A to B = 3560 NM.
What is the time from A to B? (1.00 P.)
- [A] 10 HR 05 MIN
 - [B] 10 HR 19 MIN
 - [C] 11 HR 00 MIN
 - [D] 11 HR 02 MIN
- 194 Given: GS = 480 kt.
Distance from A to B = 5360 NM.
What is the time from A to B? (1.00 P.)
- [A] 11 HR 15 MIN
 - [B] 11 HR 07 MIN
 - [C] 11 HR 06 MIN
 - [D] 11 HR 10 MIN

- 195 Given: GS = 95 kt.
Distance from A to B = 480 NM.
What is the time from A to B? (1.00 P.)
- [A] 4 HR 59 MIN
 - [B] 5 HR 03 MIN
 - [C] 5 HR 00 MIN
 - [D] 5 HR 08 MIN
- 196 Given: GS = 105 kt.
Distance from A to B = 103 NM.
What is the time from A to B? (1.00 P.)
- [A] 00 HR 59 MIN
 - [B] 00 HR 58 MIN
 - [C] 00 HR 57 MIN
 - [D] 01 HR 01 MIN
- 197 Given: GS = 120 kt.
Distance from A to B = 84 NM.
What is the time from A to B? (1.00 P.)
- [A] 00 HR 42 MIN
 - [B] 00 HR 45 MIN
 - [C] 00 HR 43 MIN
 - [D] 00 HR 44 MIN
- 198 Given: GS = 135 kt.
Distance from A to B = 433 NM.
What is the time from A to B? (1.00 P.)
- [A] 3 HR 19 MIN
 - [B] 3 HR 25 MIN
 - [C] 3 HR 12 MIN
 - [D] 3 HR 20 MIN

- 199 A straight line is drawn on a Lamberts conformal conic chart between two positions of different longitude. The angular difference between the initial true track and the final true track of the line is equal to: (1.00 P.)
- [A] earth convergency
 - [B] difference in longitude
 - [C] chart convergency
 - [D] conversion angle

200 If an aircraft flies along a VOR radial it will follow a: (1.00 P.)

- [A] great circle track
- [B] constant magnetic track
- [C] line of constant bearing
- [D] rhumbline track

Vom Teilnehmer auszufüllen

Name:

Prüf.-Nr.:

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Unterschrift

1.	A	B	C	D
4.	A	B	C	D
7.	A	B	C	D
10.	A	B	C	D
13.	A	B	C	D
16.	A	B	C	D
19.	A	B	C	D
22.	A	B	C	D
25.	A	B	C	D
28.	A	B	C	D
31.	A	B	C	D
34.	A	B	C	D
37.	A	B	C	D
40.	A	B	C	D
43.	A	B	C	D
46.	A	B	C	D
49.	A	B	C	D
52.	A	B	C	D
55.	A	B	C	D
58.	A	B	C	D
61.	A	B	C	D
64.	A	B	C	D
2.	A	B	C	D
5.	A	B	C	D
8.	A	B	C	D
11.	A	B	C	D
14.	A	B	C	D
17.	A	B	C	D
20.	A	B	C	D
23.	A	B	C	D
26.	A	B	C	D
29.	A	B	C	D
32.	A	B	C	D
35.	A	B	C	D
38.	A	B	C	D
41.	A	B	C	D
44.	A	B	C	D
47.	A	B	C	D
50.	A	B	C	D
53.	A	B	C	D
56.	A	B	C	D
59.	A	B	C	D
62.	A	B	C	D
65.	A	B	C	D
3.	A	B	C	D
6.	A	B	C	D
9.	A	B	C	D
12.	A	B	C	D
15.	A	B	C	D
18.	A	B	C	D
21.	A	B	C	D
24.	A	B	C	D
27.	A	B	C	D
30.	A	B	C	D
33.	A	B	C	D
36.	A	B	C	D
39.	A	B	C	D
42.	A	B	C	D
45.	A	B	C	D
48.	A	B	C	D
51.	A	B	C	D
54.	A	B	C	D
57.	A	B	C	D
60.	A	B	C	D
63.	A	B	C	D
66.	A	B	C	D

Vom Teilnehmer auszufüllen

Name:

Prüf.-Nr.:

Prüfungsdatum:

Unterschrift

67.	A	B	C	D
70.	A	B	C	D
73.	A	B	C	D
76.	A	B	C	D
79.	A	B	C	D
82.	A	B	C	D
85.	A	B	C	D
88.	A	B	C	D
91.	A	B	C	D
94.	A	B	C	D
97.	A	B	C	D
100.	A	B	C	D
103.	A	B	C	D
106.	A	B	C	D
109.	A	B	C	D
112.	A	B	C	D
115.	A	B	C	D
118.	A	B	C	D
121.	A	B	C	D
124.	A	B	C	D
127.	A	B	C	D
130.	A	B	C	D
68.	A	B	C	D
71.	A	B	C	D
74.	A	B	C	D
77.	A	B	C	D
80.	A	B	C	D
83.	A	B	C	D
86.	A	B	C	D
89.	A	B	C	D
92.	A	B	C	D
95.	A	B	C	D
98.	A	B	C	D
101.	A	B	C	D
104.	A	B	C	D
107.	A	B	C	D
110.	A	B	C	D
113.	A	B	C	D
116.	A	B	C	D
119.	A	B	C	D
122.	A	B	C	D
125.	A	B	C	D
128.	A	B	C	D
131.	A	B	C	D
69.	A	B	C	D
72.	A	B	C	D
75.	A	B	C	D
78.	A	B	C	D
81.	A	B	C	D
84.	A	B	C	D
87.	A	B	C	D
90.	A	B	C	D
93.	A	B	C	D
96.	A	B	C	D
99.	A	B	C	D
102.	A	B	C	D
105.	A	B	C	D
108.	A	B	C	D
111.	A	B	C	D
114.	A	B	C	D
117.	A	B	C	D
120.	A	B	C	D
123.	A	B	C	D
126.	A	B	C	D
129.	A	B	C	D
132.	A	B	C	D

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133	A	B	C	D
136	A	B	C	D
139	A	B	C	D
142	A	B	C	D
145	A	B	C	D
148	A	B	C	D
151	A	B	C	D
154	A	B	C	D
157	A	B	C	D
160	A	B	C	D
163	A	B	C	D
166	A	B	C	D
169	A	B	C	D
172	A	B	C	D
175	A	B	C	D
178	A	B	C	D
181	A	B	C	D
184	A	B	C	D
187	A	B	C	D
190	A	B	C	D
193	A	B	C	D
196	A	B	C	D
134	A	B	C	D
137	A	B	C	D
140	A	B	C	D
143	A	B	C	D
146	A	B	C	D
149	A	B	C	D
152	A	B	C	D
155	A	B	C	D
158	A	B	C	D
161	A	B	C	D
164	A	B	C	D
167	A	B	C	D
170	A	B	C	D
173	A	B	C	D
176	A	B	C	D
179	A	B	C	D
182	A	B	C	D
185	A	B	C	D
188	A	B	C	D
191	A	B	C	D
194	A	B	C	D
197	A	B	C	D
135	A	B	C	D
138	A	B	C	D
141	A	B	C	D
144	A	B	C	D
147	A	B	C	D
150	A	B	C	D
153	A	B	C	D
156	A	B	C	D
159	A	B	C	D
162	A	B	C	D
165	A	B	C	D
168	A	B	C	D
171	A	B	C	D
174	A	B	C	D
177	A	B	C	D
180	A	B	C	D
183	A	B	C	D
186	A	B	C	D
189	A	B	C	D
192	A	B	C	D
195	A	B	C	D
198	A	B	C	D

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Name:	Prüf.-Nr.:
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199	A	B	C	D		200	A	B	C	D
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Nur für den internen Gebrauch

LÖSUNGSBOGEN

Prüf.-Nr.:

Prüfungsdatum:

1.			C	
2.				D
3.		B		
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11.				D
12.			C	
13.		B		
14.				D
15.	A			
16.				D
17.		B		
18.			C	
19.		B		
20.			C	
21.				D
22.	A			
23.			C	
24.	A			
25.			C	
26.			C	
27.				D
28.			C	
29.			C	
30.			C	
31.	A			
32.				D
33.				D
34.		B		
35.				D
36.	A			
37.			C	
38.	A			
39.	A			
40.				D
41.	A			
42.				D
43.	A			
44.		B		
45.			C	
46.			C	
47.			C	
48.				D
49.				D
50.	A			
51.		B		
52.	A			
53.				D
54.			C	
55.		B		
56.			C	
57.		B		
58.				D
59.			C	
60.		B		
61.			C	
62.		B		
63.	A			
64.		B		
65.				D
66.			C	

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67.				D	68.			C		69.	A			
70.			C		71.				D	72.	A			
73.			C		74.			C		75.			C	
76.				D	77.			C		78.			C	
79.		B			80.				D	81.				D
82.	A				83.	A				84.		B		
85.	A				86.		B			87.		B		
88.	A				89.		B			90.				D
91.		B			92.			C		93.			C	
94.			C		95.			C		96.	A			
97.				D	98.			C		99.			C	
100.			C		101.	A				102.				D
103.	A				104.			C		105.		B		
106.	A				107.		B			108.		B		
109.			C		110.		B			111.			C	
112.			C		113.			C		114.		B		
115.	A				116.				D	117.				D
118.				D	119.		B			120.		B		
121.	A				122.	A				123.			C	
124.			C		125.				D	126.		B		
127.				D	128.				D	129.			C	
130.		B			131.	A				132.			C	

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Prüfungsdatum:

133 .			C	
136 .			C	
139 .	A			
142 .				D
145 .			C	
148 .				D
151 .				D
154 .			C	
157 .			C	
160 .			C	
163 .			C	
166 .		B		
169 .				D
172 .	A			
175 .	A			
178 .				D
181 .			C	
184 .		B		
187 .		B		
190 .		B		
193 .		B		
196 .	A			
134 .				D
137 .		B		
140 .				D
143 .				D
146 .	A			
149 .			C	
152 .				D
155 .				D
158 .	A			
161 .				D
164 .	A			
167 .			C	
170 .	A			
173 .	A			
176 .			C	
179 .	A			
182 .		B		
185 .				D
188 .		B		
191 .	A			
194 .				D
197 .	A			
135 .			C	
138 .	A			
141 .				D
144 .		B		
147 .			C	
150 .			C	
153 .	A			
156 .	A			
159 .				D
162 .			C	
165 .				D
168 .	A			
171 .		B		
174 .	A			
177 .			C	
180 .				D
183 .				D
186 .				D
189 .		B		
192 .			C	
195 .		B		
198 .			C	

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Prüfungsdatum:	

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