have to worry about turbulence at FL 340?
a) Shannon - Hamburg
b) Zurich - Rome
c) Zurich - Athens
d) Rome - Berlin

50.10.3.3 (4080)
(For this question use annex 050-4383A)If you are flying from Zurich to Stockholm at FL 240, what conditions can you expect at cruising altitude?
a) Largely free of cloud, moderate icing half way along the route
b) Cloud most of the way, little chance of CAT
c) Scattered thunderstorms
d) Out of cloud throughout the flight

50.10.3.3 (4081)
(For this question use annex 050-4384A)Judging by the chart, what windspeeds can you expect at FL 340 above Rome?
a) 145 kt
b) 340 kt
c) 95 kt
d) 140 km/h

50.10.3.3 (4082)
(For this question use annex 050-4385A)Judging by the chart, on which of these routes can you expect to encounter moderate and locally severe CAT at FL 300?
a) Zurich - Rome
b) London - Zurich
c) Zurich - Copenhagen
d) Paris - Bordeaux

50.10.3.3 (4083)
(For this question use annex 050-4386A)If you are flying from Zurich to Shannon at FL 340, where will your cruising altitude be?
a) Constantly in the stratosphere
b) Constantly in the troposhere
c) First in the troposphere and later in the stratosphere
d) In the stratosphere for part of time

50.10.3.3 (4084)
(For this question use annex 050-4387A)Which of these statements is true?
a) Scattered thunderstorms can be expected over France
b) Freezing level above Madrid is higher than FL 120
c) The front to the north of London is moving south
d) Turbulence is likely to be encountered at FL 410 over Madrid

50.10.3.3 (4085)
(For this question use annex 050-4388A)On which of these routes would you not need to worry about icing at FL 180?
a) Hamburg - Stockholm
b) Zurich - Madrid
c) Zurich - Hamburg
d) Zurich - Vienna

50.10.3.3 (4086)
A pilot is warned of severe icing at certain flight levels by information supplied in
a) SWC and SIGMET
b) TAF and METAR
c) METAR and SIGMET
d) TAF and SIGMET

50.10.3.5 (4087)
What units are used to report vertical wind shear?
a) kt/100 FT.
b) kt.
c) m/100 FT.
d) m/sec.

50.10.3.6 (4088)
Which of the following weather reports is a warning of conditions that could be potentially hazardous to aircraft in flight ?
a) SIGMET.
b) ATIS.
c) SPECI.
d) TAF.

50.10.3.6 (4089)
In which of the following circumstances is a SIGMET issued ?
a) Marked mountain waves.
b) Fog or a thunderstorm at an aerodrome.
c) Clear ice on the runways of an aerodrome.
d) A sudden change in the weather conditions contained in the METAR.

61.1.1.0 (4090)
The angle between the plane of the ecliptic and the plane of equator is approximately :
a) 23.5°
b) 25.3°
c) 27.5°
d) 66.5°

61.1.1.0 (4091)
Which is the highest latitude listed below at which the sun will rise above the horizon and set every day?
a) 66°
b) 68°
c) 72°
d) 62°

61.1.1.0 (4092)
In which two months of the year is the difference between the transit of the

Apparent Sun and Mean Sun across the Greenwich Meridian the greatest?
a) February and November
b) March and September
c) June and December
d) April and August

61.1.1.0 (4093)
What is the highest latitude listed below at which the sun will reach an altitude of 90° above the horizon at some time during the year?
a) 23°
b) 45°
c) 66°
d) 0°

61.1.1.0 (4094)
Assuming mid-latitudes (40° to 50°N/S).At which time of year is the relationship between the length of day and night, as well as the rate of change of declination of the sun, changing at the greatest rate?
a) Spring equinox and autumn equinox
b) Summer solstice and spring equinox
c) summer solstice and winter solstice
d) Winter solstice and autumn equinox

61.1.1.0 (4095)
At what approximate date is the earth closest to the sun (perihelion)?
a) Beginning of January
b) End of March
c) Beginning of July
d) End of June

61.1.1.0 (4096)
At what approximate date is the earth furthest from the sun (aphelion)?
a) Beginning of July
b) End of December
c) Beginning of January
d) End of September

61.1.1.0 (4097)
Seasons are due to the:
a) inclination of the polar axis with the ecliptic plane
b) Earth's elliptical orbit around the Sun
c) Earth's rotation on its polar axis
d) variable distance between Earth and Sun

61.1.2.0 (4098)
An aircraft departs from position A (04°10' S 178°22'W) and flies northward following the meridian for 2950 NM. It then flies westward along the parallel of latitude for 382 NM to position B. The coordinates of position B are?
a) 45°00'N 172°38'E
b) 53°20'N 169°22W
c) 45°00'N 169°22W
d) 53°20'N 172°38'E

61.1.2.0 (4099)
The angle between the true great-circle track and the true rhumb-line track joining the following points: A (60° S 165° W) B (60° S 177° E), at the place of departure A, is:
a) 7.8°
b) 9°
c) 15.6°
d) 5.2°

61.1.2.0 (4100)
Given: Waypoint 1. 60°S 030°W Waypoint 2. 60°S 020°WWhat will be the approximate latitude shown on the display unit of an inertial navigation system at longitude 025°W?
a) 060°06'S
b) 060°11'S
c) 059°49'S
d) 060°00'S

61.1.2.0 (4101)
What is the time required to travel along the parallel of latitude 60° N between meridians 010° E and 030° W at a groundspeed of 480 kt?
a) 2 HR 30 MIN
b) 1 HR 15 MIN
c) 1 HR 45 MIN
d) 5 HR 00 MIN

61.1.2.0 (4102)
A Rhumb line is :
a) a line on the surface of the earth cutting all meridians at the same angle
b) the shortest distance between two points on a Polyconic projection
c) any straight line on a Lambert projection
d) a line convex to the nearest pole on a Mercator projection

61.1.2.0 (4103)
A great circle track joins position A (59°S 141°W) and B (61°S 148°W). What is the difference between the great circle track at A and B?
a) It increases by 6°
b) It decreases by 6°
c) It increases by 3°
d) It decreases by 3°

61.1.2.0 (4104)
What is the longitude of a position 6 NM to the east of 58°42'N 094°00'W?
a) 093°48.5'W
b) 093°54.0'W
c) 093°53.1'W
d) 094°12.0'W

61.1.2.0 (4105)
Given: value for the ellipticity of the Earth is 1/297. Earth's semi-major axis, as measured at the equator, equals 6378.4 km. What is the semi-minor axis (km) of the earth at the axis of the Poles?
a) 6 356.9
b) 6 378.4
c) 6 367.0
d) 6 399.9

61.1.2.0 (4106)
Position A is located on the equator at longitude 130°00E. Position B is located 100 NM from A on a bearing of 225°(T).The coordinates of position B are:
a) 01°11'S 128°49'E
b) 01°11'N 131°11'E
c) 01°11'S 131°11'E
d) 01°11'N 128°49'E

61.1.2.0 (4107)
In order to fly from position A (10°00'N, 030°00'W) to position B (30°00'N, 050°00'W), maintaining a constant true course, it is necessary to fly:
a) a rhumb line track
b) the constant average drift route
c) the great-circle route
d) a straight line plotted on a Lambert chart

61.1.2.0 (4108)
The rhumb line track between position A (45°00'N, 010°00'W) and position B (48°30'N, 015°00'W) is approximately:
a) 315
b) 330
c) 300
d) 345

61.1.2.0 (4109)
The diameter of the Earth is approximately:
a) 12 700 km
b) 6 350 km
c) 18 500 km
d) 40 000 km

61.1.2.0 (4110)
The maximum difference between geocentric and geodetic latitude occurs at about:
a) 45° North and South
b) 60° North and South
c) 90° North and South
d) 0° North and South (equator)

61.1.2.0 (4111)
The great circle distance between position A (59°34.1'N 008°08.4'E) and B (30°25.9'N 171°51.6'W) is:
a) 5 400 NM
b) 10 800 km
c) 2 700 NM
d) 10 800 NM

61.1.2.0 (4112)
Given:Position A 45°N, ?°EPosition B 45°N, 45°15'EDistance A-B = 280 NMB is to the East of ARequired: longitude of position A?
a) 38°39'E
b) 49°57'E
c) 51°51'E
d) 40°33'E

61.1.2.0 (4113)
If an aeroplane was to circle around the Earth following parallel 60°N at a ground speed of 480 kt. In order to circle around the Earth along the equator in the same amount of time, it should fly at a ground speed of:
a) 960 kt
b) 240 kt
c) 550 kt
d) 480 kt

61.1.2.0 (4114)
An aircraft passes position A (60°00'N 120°00'W) on route to position B (60°00'N 140°30'W). What is the great circle track on departure from A?
a) 279°
b) 288°
c) 261°
d) 270°

61.1.2.0 (4115)
An aeroplane flies from A (59°S 142°W) to B (61°S 148°W) with a TAS of 480 kt. The autopilot is engaged and coupled with an Inertial Navigation System in which AB track is active.On route AB, the true track:
a) increases by 5°
b) varies by 10°
c) decreases by 6°
d) varies by 4°

61.1.2.0 (4116)
The circumference of the earth is approximately:
a) 21600 NM
b) 43200 NM
c) 5400 NM
d) 10800 NM

61.1.2.0 (4117)
The Great Circle bearing of 'B' (70°S 060°E), from 'A' (70° S 030° W), is approximately:
a) 135°(T)
b) 150°(T)

c) 090°(T)
d) 315°(T)

61.1.2.0 (4118)
At what approximate latitude is the length of one minute of arc along a meridian equal to one NM (1852 m) correct?
a) 45°
b) 0°
c) 90°
d) 30°

61.1.2.0 (4119)
An aircraft flies a great circle track from 56° N 070° W to 62° N 110° E. The total distance travelled is?
a) 3720 NM
b) 5420 NM
c) 1788 NM
d) 2040 NM

61.1.2.0 (4120)
Given :A is N55° 000°B is N54° E010°The average true course of the great circle is 100°.The true course of the rhumbline at point A is:
a) 100°
b) 096°
c) 104°
d) 107°

61.1.2.0 (4121)
The circumference of the parallel of latitude at 60°N is approximately:
a) 10 800 NM
b) 18 706 NM
c) 20 000 NM
d) 34 641 NM

61.1.2.0 (4122)
Given:The coordinates of the heliport at Issy les Moulineaux are:N48°50' E002°16.5'The coordinates of the antipodes are :
a) S48°50' W177°43.5'
b) S48°50' E177°43.5'
c) S41°10' W177°43.5'
d) S41°10' E177°43.5'

61.1.2.0 (4123)
Given:Position 'A' is N00° E100°, Position 'B' is 240°(T), 200 NM from 'A'.What is the position of 'B'?
a) S01°40' E097°07'
b) N01°40' E097°07'
c) S01°40' E101°40'
d) N01°40' E101°40'

61.1.3.0 (4124)
The duration of civil twilight is the time:
a) between sunset and when the centre of the sun is 6° below the true horizon
b) agreed by the international aeronautical authorities which is 12 minutes
c) needed by the sun to move from the apparent height of 0° to the apparent height of 6°
d) between sunset and when the centre of the sun is 12° below the true horizon

61.1.3.0 (4125)
On the 27th of February, at 52°S and 040°E, the sunrise is at 0243 UTC. On the same day, at 52°S and 035°W, the sunrise is at:
a) 0743 UTC
b) 0243 UTC
c) 2143 UTC
d) 0523 UTC

61.1.3.0 (4126)
What is the local mean time, position 65°25'N 123°45'W at 2200 UTC?
a) 1345
b) 2200
c) 615
d) 815

61.1.3.0 (4127)
The Local Mean Time at longitude 095°20'W, at 0000 UTC, is :
a) 1738:40 previous day
b) 0621:20 previous day
c) 1738:40 same day
d) 0621:20 same day

61.1.3.0 (4128)
5 HR 20 MIN 20 SEC corresponds to a longitude difference of:
a) 80°05'
b) 81°10'
c) 75°00'
d) 78°45'

61.1.3.0 (4129)
(For this question use annex 061-2304A)The UTC of sunrise on 6 December at WINNIPEG (Canada) (49°50'N 097°30'W) is:
a) 1413
b) 930
c) 113
d) 2230

61.1.3.0 (4130)
(For this question use annexes 061-2305A and 061-2305B) When it is 1000 Standard Time in Kuwait, the Standard Time in Algeria is:
a) 800
b) 1200
c) 1300
d) 700

61.1.3.0 (4131)
(For this question use annex 061-2325A to 061-2325D)An aircraft takes off from Guam at 2300 Standard Time on 30 April local date. After a flight of 11 HR 15 MIN it lands at Los Angeles (California). What is the Standard Time and local date of arrival (assume summer time rules apply)?
a) 1715 on 30 April
b) 1215 on 1 May
c) 1315 on 1 May
d) 1615 on 30 April

61.1.3.0 (4132)
(For this question use annex 061-2326A to 061-2326D)When it is 0600 Standard Time in Queensland (Australia) the Standard Time in Hawaii (USA) is:
a) 1000
b) 1200
c) 200
d) 600

61.1.3.0 (4133)
The main reason that day and night, throughout the year, have different duration, is due to the:
a) inclination of the ecliptic to the equator
b) earth's rotation
c) relative speed of the sun along the ecliptic
d) gravitational effect of the sun and moon on the speed of rotation of the earth

61.1.3.0 (4134)
What is the meaning of the term ""standard time"" ?
a) It is the time set by the legal authorities for a country or part of a country
b) It is the time zone system applicable only in the USA
c) It is an expression for local mean time
d) It is another term for UTC

61.1.3.0 (4135)
Civil twilight is defined by :
a) sun altitude is 6° below the celestial horizon
b) sun altitude is 12° below the celestial horizon
c) sun altitude is 18° below the celestial horizon
d) sun upper edge tangential to horizon

61.1.4.0 (4136)
Given: true track is 348°, drift 17° left, variation 32° W, deviation 4°E. What is the compass heading?
a) 033°
b) 007°
c) 359°
d) 337°

61.1.4.0 (4137)
An Agonic line is a line that connects:
a) positions that have 0° variation
b) positions that have the same variation
c) points of equal magnetic dip
d) points of equal magnetic horizontal field strength

61.1.4.0 (4138)
Isogonic lines connect positions that have:
a) the same variation
b) 0° variation
c) the same elevation
d) the same angle of magnetic dip

61.1.4.0 (4139)
Compass deviation is defined as the angle between:
a) Magnetic North and Compass North
b) True North and Magnetic North
c) True North and Compass North
d) the horizontal and the total intensity of the earth's magnetic field

61.1.4.0 (4140)
The angle between True North and Magnetic North is called :
a) variation
b) deviation
c) compass error
d) drift

61.1.4.0 (4141)
Deviation applied to magnetic heading gives:
a) compass heading
b) true heading
c) magnetic course
d) magnetic track

61.1.4.0 (4142)
Isogrives are lines that connect positions that have:
a) the same grivation
b) the same horizontal magnetic field strength
c) the same variation
d) O° magnetic dip

61.1.4.0 (4143)
The lines on the earth's surface that join points of equal magnetic variation are called:
a) isogonals
b) isotachs
c) isogrives
d) isoclines

61.1.4.0 (4144)
A negative (westerly) magnetic variation signifies that :
a) True North is East of Magnetic North

b) True North is West of Magnetic North
c) Compass North is East of Magnetic North
d) Compass North is West of Magnetic North

61.1.4.0 (4145)
The angle between Magnetic North and Compass North is called:
a) compass deviation
b) compass error
c) magnetic variation
d) alignment error

61.1.4.0 (4146)
The north and south magnetic poles are the only positions on the earth's surface where:
a) a freely suspended compass needle will stand vertical
b) isogonals converge
c) a freely suspended compass needle will stand horizontal
d) the value of magnetic variation equals 90°

61.1.5.0 (4147)
The rhumb-line distance between points A (60°00'N 002°30'E) and B (60°00'N 007°30'W) is:
a) 300 NM
b) 450 NM
c) 600 NM
d) 150 NM

61.1.5.0 (4148)
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:
a) 04°00'N 029°58'W
b) 04°00'N 030°02'W
c) 04°00'N 030°00'W
d) 03°58'N 030°02'W

61.1.5.0 (4149)
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:
a) 60°00'N 090°00'W
b) 60°00'N 030°00'E
c) 59°00'N 060°00'W
d) 59°00'N 090°00'W

61.1.5.0 (4150)
An aircraft departing A(N40º 00´ E080º 00´) flies a constant true track of 270º at a ground speed of 120 kt. What are the coordinates of the position reached in 6 HR?
a) N40º 00´ E064º 20´
b) N40º 00´ E070º 30´
c) N40º 00´ E060º 00´
d) N40º 00´ E068º 10´

61.1.5.0 (4151)
A flight is to be made from 'A' 49°S 180°E/W to 'B' 58°S, 180°E/W.The distance in kilometres from 'A' to 'B' is approximately:
a) 1000
b) 1222
c) 540
d) 804

61.1.5.0 (4152)
An aircraft at position 60°N 005°W tracks 090°(T) for 315 km.On completion of the flight the longitude will be:
a) 000°40'E
b) 005°15'E
c) 002°10'W
d) 000°15'E

61.1.5.0 (4153)
The 'departure' between positions 60°N 160°E and 60°N 'x' is 900 NM.What is the longitude of 'x'?
a) 170°W
b) 140°W
c) 145°E
d) 175°E

61.1.5.0 (4154)
An aircraft at latitude 02°20'N tracks 180°(T) for 685 km.On completion of the flight the latitude will be:
a) 03°50'S
b) 04°10'S
c) 04°30'S
d) 09°05'S

61.1.5.0 (4155)
An aircraft at latitude 10° South flies north at a GS of 890 km/HR. What will its latitude be after 1.5 HR?
a) 02°00'N
b) 12°15'N
c) 22°00'N
d) 03°50'N

61.1.5.0 (4156)
An aircraft at latitude 10°North flies south at a groundspeed of 445 km/HR.What will be its latitude after 3 HR?
a) 02°00'S
b) 12°15'S
c) 22°00'S
d) 03°50'S

61.1.5.0 (4157)
Given : Position 'A' N60 W020,Position 'B' N60 W021, Position 'C' N59 W020. What are, respectively, the distances from A to B and from A to C?
a) 30 NM and 60 NM
b) 52 NM and 60 NM
c) 60 NM and 30 NM
d) 60 NM and 52 NM

61.2.1.0 (4158)
An aircraft is over position HO (55°30'N 060°15'W), where YYR VOR (53°30'N 060°15'W) can be received. The magnetic variation is 31°W at HO and 28°W at YYR.What is the radial from YYR?
a) 028°
b) 208°
c) 031°
d) 332°

61.2.1.0 (4159)
When is the magnetic compass most effective?
a) About midway between the magnetic poles
b) In the region of the magnetic South Pole.
c) In the region of the magnetic North Pole.
d) On the geographic equator

61.2.1.0 (4160)
What is the value of the magnetic dip at the magnetic south pole ?
a) 90°
b) 45°
c) 60°
d) 0°

61.2.1.0 (4161)
The value of magnetic variation:
a) has a maximum of 180°
b) must be 0° at the magnetic equator
c) varies between a maximum of 45° East and 45° West
d) cannot exceed 90°

61.2.1.0 (4162)
Isogonals converge at the:
a) North and South geographic and magnetic poles
b) Magnetic equator
c) North magnetic pole only
d) North and South magnetic poles only

61.2.1.0 (4163)
A line drawn on a chart which joins all points where the value of magnetic variation is zero is called an:
a) agonic line
b) aclinic line
c) isogonal
d) isotach

61.2.1.0 (4164)
The horizontal component of the earth's magnetic field:
a) is approximately the same at magnetic latitudes 50°N and 50°S
b) weakens with increasing distance from the magnetic poles
c) weakens with increasing distance from the nearer magnetic pole
d) is approximately the same at all magnetic latitudes less than 60°

61.2.1.0 (4165)
Complete the following statement regarding magnetic variation. The charted values of magnetic variation on earth normally change annually due to:
a) magnetic pole movement causing numerical values at all locations to increase or decrease
b) magnetic pole movement causing numerical values at all locations to increase.
c) a reducing field strength causing numerical values at all locations to decrease.
d) an increasing field strength causing numerical values at all locations to increase.

61.2.1.0 (4166)
The Earth can be considered as being a magnet with the:
a) blue pole near the north pole of the earth and the direction of the magnetic force pointing straight down to the earth's surface
b) red pole near the north pole of the earth and the direction of the magnetic force pointing straight down to the earth's surface
c) blue pole near the north pole of the earth and the direction of the magnetic force pointing straight up from the earth's surface
d) red pole near the north pole of the earth and the direction of the magnetic force pointing straight up from the earth's surface

61.2.1.0 (4167)
Which of the following statements concerning earth magnetism is completely correct?
a) An isogonal is a line which connects places with the same magnetic variation, the aclinic is the line of zero magnetic dip
b) An isogonal is a line which connects places with the same magnetic variation, the agonic line is the line of zero magnetic dip
c) An isogonal is a line which connects places of equal dip, the aclinic is the line of zero magnetic dip
d) An isogonal is a line which connects places with the same magnetic variation, the aclinic connects places with the same magnetic field strength

61.2.1.0 (4168)
Which of the following statements concerning the earth's magnetic field is completely correct?
a) The blue pole of the earth's magnetic field is situated in North Canada
b) At the earth's magnetic equator, the inclination varies depending on whether the geograhic equator is north or south of the magnetic equator
c) The earth's magnetic field can be classified as transient, semi-permanent or permanent
d) Dip is the angle between total magnetic field and vertical field component

61.2.1.0 (4169)
The sensitivity of a direct reading compass varies:
a) directly with the horizontal component of the earth's magnetic field
b) directly with the vertical component of the earth's magnetic field
c) inversely with both vertical and horizontal components of the earth's magnetic field
d) inversely with the vertical component of the earth's magnetic field

61.2.1.0 (4170)
Isogonals are lines of equal :
a) magnetic variation.
b) compass deviation.
c) pressure.
d) wind velocity.

61.2.1.0 (4171)
At a specific location, the value of magnetic variation:
a) varies slowly over time
b) depends on the type of compass installed
c) depends on the magnetic heading
d) depends on the true heading

61.2.2.0 (4172)
When an aircraft on a westerly heading on the northern hemisphere accelerates, the effect of the acceleration error causes the magnetic compass to:
a) indicate a turn towards the north
b) lag behind the turning rate of the aircraft
c) indicate a turn towards the south
d) to turn faster than the actual turning rate of the aircraft

61.2.2.0 (4173)
When decelerating on a westerly heading in the Northern hemisphere, the compass card of a direct reading magnetic compass will turn :
a) clockwise giving an apparent turn toward the south
b) anti-clockwise giving an apparent turn towards the south
c) clockwise giving an apparent turn towards the north
d) anti-clockwise giving an apparent turn towards the north

61.2.2.0 (4174)
An aircraft in the northern hemisphere makes an accurate rate one turn to the right/starboard. If the initial heading was 330°, after 30 seconds of the turn the direct reading magnetic compass should read:
a) less than 060°
b) 060°
c) more than 060°
d) more or less than 060° depending on the pendulous suspension used

61.2.2.0 (4175)
When turning right from 330°(C) to 040°(C) in the northern hemisphere, the reading of a direct reading magnetic compass will:
a) under-indicate the turn and liquid swirl will increase the effect
b) over-indicate the turn and liquid swirl will decrease the effect
c) under-indicate the turn and liquid swirl will decrease the effect
d) over-indicate the turn and liquid swirl will increase the effect

61.2.2.0 (4176)
When accelerating on an easterly heading in the Northern hemisphere, the compass card of a direct reading magnetic compass will turn :
a) clockwise giving an apparent turn toward the north
b) clockwise giving an apparent turn toward the south
c) anti-clockwise giving an apparent turn toward the north
d) anti-clockwise giving an apparent turn toward the south

61.2.2.0 (4177)
An aircraft in the northern hemisphere is making an accurate rate one turn to the right. If the initial heading was 135°, after 30 seconds the direct reading magnetic compass should read:
a) more than 225°
b) 225°
c) less than 225°
d) more or less than 225° depending on the pendulous suspension used

61.2.2.0 (4178)
When accelerating on a westerly heading in the northern hemisphere, the compass card of a direct reading magnetic compass will turn:
a) anti-clockwise giving an apparent turn towards the north
b) anti-clockwise giving an apparent turn towards the south
c) clockwise giving an apparent turn towards the north
d) clockwise giving an apparent turn towards the south

61.2.2.0 (4179)
Which of the following statements is correct concerning the effect of turning errors on a direct reading compass?
a) Turning errors are greatest on north/south headings, and are greatest at high latitudes
b) Turning errors are greatest on east/west headings, and are least at high latitudes
c) Turning errors are greatest on north/south headings, and are least at high latitudes
d) Turning errors are greatest on east/west headings, and are greatest at high latitudes

61.2.2.0 (4180)
At the magnetic equator, when accelerating after take off on heading West, a direct reading compass :
a) indicates the correct heading
b) overreads the heading
c) underreads the heading
d) indicates a turn to the south

61.2.2.0 (4181)
Permanent magnetism in aircraft arises chiefly from:
a) hammering, and the effect of the earth's magnetic field, whilst under construction
b) exposure to the earth's magnetic field during normal operation

c) the combined effect of aircraft electrical equipment and the earth's magnetic field
d) the effect of internal wiring and exposure to electrical storms

61.2.2.0 (4182)
Concerning direct reading magnetic compasses, in the northern hemisphere, it can be said that :
a) on an Easterly heading, a longitudinal acceleration causes an apparent turn to the North
b) on an Easterly heading, a longitudinal acceleration causes an apparent turn to the South
c) on a Westerly heading, a longitudinal acceleration causes an apparent turn to the South
d) on a Westerly heading, a longitudinal deceleration causes an apparent turn to the North

61.2.2.0 (4183)
In northern hemisphere, during an acceleration in an easterly direction, the magnetic compass will indicate:
a) a decrease in heading
b) an increase in heading
c) an apparent turn to the South
d) a heading of East

61.2.2.0 (4184)
The purpose of compass check swing is to:
a) measure the angle between Magnetic North and Compass North
b) cancel out the vertical component of the earth's magnetic field
c) cancel out the horizontal component of the earth's magnetic field
d) cancel out the effects of the magnetic fields found on board the aeroplane

61.2.3.0 (4185)
In a remote indicating compass system the amount of deviation caused by aircraft magnetism and electrical circuits may be minimised by:
a) mounting the detector unit in the wingtip
b) the use of repeater cards
c) positioning the master unit in the centre of the aircraft
d) using a vertically mounted gyroscope

61.2.3.0 (4186)
A direct reading compass should be swung when:
a) there is a large, and permanent, change in magnetic latitude
b) there is a large change in magnetic longitude
c) the aircraft is stored for a long period and is frequently moved
d) the aircraft has made more than a stated number of landings

61.2.3.0 (4187)
The direct reading magnetic compass is made aperiodic (dead beat) by:
a) keeping the magnetic assembly mass close to the compass point and by using damping wires
b) using the lowest acceptable viscosity compass liquid
c) using long magnets
d) pendulous suspension of the magnetic assembly

61.2.3.0 (4188)
The annunciator of a remote indicating compass system is used when:
a) synchronising the magnetic and gyro compass elements
b) compensating for deviation
c) setting local magnetic variation
d) setting the 'heading' pointer

61.2.3.0 (4189)
Which one of the following is an advantage of a remote reading compass as compared with a standby compass?
a) It senses the magnetic meridian instead of seeking it, increasing compass sensitivity
b) It is lighter than a direct reading compass because it employs, apart from the detector unit, existing aircraft equipment
c) It eliminates the effect of turning and acceleration errors by pendulously suspending the detector unit
d) It is more reliable because it is operated electrically and power is always available from sources within the aircraft

61.2.3.0 (4190)
Which of the following is an occasion for carrying out a compass swing on a Direct Reading Compass?
a) After an aircraft has passed through a severe electrical storm, or has been struck by lightning
b) Before an aircraft goes on any flight that involves a large change of magnetic latitude
c) After any of the aircraft radio equipment has been changed due to unserviceability
d) Whenever an aircraft carries a large freight load regardless of its content

61.2.3.0 (4191)
The main reason for mounting the detector unit of a remote reading compass in the wingtip of an aeroplane is:
a) to minimise the amount of deviation caused by aircraft magnetism and electrical circuits
b) to maximise the units exposure to the earth's magnetic field
c) to ensure that the unit is in the most accessible position on the aircraft for ease of maintenance
d) by having detector units on both wingtips, to cancel out the deviation effects caused by the aircraft strucure

61.2.3.0 (4192)
The main reason for usually mounting the detector unit of a remote indicating compass in the wingtip of an aeroplane is to:
a) reduce the amount of deviation caused by aircraft magnetism and electrical circuits
b) facilitate easy maintenance of the unit and increase its exposure to the Earth's magnetic field
c) place it in a position where there is no electrical wiring to cause deviation errors
d) place it where it will not be subjected to electrical or magnetic interference from the aircraft

61.2.3.0 (4193)
The main advantage of a remote indicating compass over a direct reading compass

is that it:
a) senses, rather than seeks, the magnetic meridian
b) has less moving parts
c) requires less maintenance
d) is able to magnify the earth's magnetic field in order to attain greater accuracy

61.3.1.0 (4194)
A chart has the scale 1 : 1 000 000. From A to B on the chart measures 1.5 inches (one inch equals 2.54 centimetres), the distance from A to B in NM is :
a) 20.6
b) 38.1
c) 44.5
d) 54.2

61.3.1.0 (4195)
The nominal scale of a Lambert conformal conic chart is the:
a) scale at the standard parallels
b) mean scale between pole and equator
c) mean scale between the parallels of the secant cone
d) scale at the equator

61.3.1.0 (4196)
The chart that is generally used for navigation in polar areas is based on a:
a) Stereographical projection
b) Direct Mercator projection
c) Gnomonic projection
d) Lambert conformal projection

61.3.1.0 (4197)
A Mercator chart has a scale at the equator = 1 : 3 704 000. What is the scale at latitude 60° S?
a) 1 : 1 852 000
b) 1 : 7 408 000
c) 1 : 3 208 000
d) 1 : 185 200

61.3.1.0 (4198)
The distance measured between two points on a navigation map is 42 mm (millimetres). The scale of the chart is 1:1 600 000.The actual distance between these two point is approximately:
a) 36.30 NM
b) 370.00 NM
c) 67.20 NM
d) 3.69 NM

61.3.1.0 (4199)
The standard parallels of a Lambert's conical orthomorphic projection are 07°40'N and 38°20' N.The constant of the cone for this chart is:
a) 0.39
b) 0.60
c) 0.92
d) 0.42

61.3.1.0 (4200)
On a Lambert conformal conic chart the convergence of the meridians:
a) is the same as earth convergency at the parallel of origin
b) is zero throughout the chart
c) varies as the secant of the latitude
d) equals earth convergency at the standard parallels

61.3.1.0 (4201)
A straight line drawn on a chart measures 4.63 cm and represents 150 NM. The chart scale is:
a) 1 : 6 000 000
b) 1 : 3 000 000
c) 1 : 5 000 000
d) 1 : 1 000 000

61.3.1.0 (4202)
On a direct Mercator projection, at latitude 45° North, a certain length represents 70 NM. At latitude 30° North, the same length represents approximately:
a) 86 NM
b) 57 NM
c) 70 NM
d) 81 NM

61.3.1.0 (4203)
On a direct Mercator projection, the distance measured between two meridians spaced 5° apart at latitude 60°N is 8 cm.The scale of this chart at latitude 60°N is approximately:
a) 1 : 3 500 000
b) 1 : 4 750 000
c) 1 : 7 000 000
d) 1 : 6 000 000

61.3.1.0 (4204)
On a Mercator chart, the scale:
a) varies as 1/cosine of latitude (1/cosine= secant)
b) varies as the sine of the latitude
c) is constant throughout the chart
d) varies as 1/2 cosine of the co-latitude

61.3.1.0 (4205)
In a navigation chart a distance of 49 NM is equal to 7 cm. The scale of the chart is approximately:
a) 1 : 1 300 000
b) 1 : 700 000
c) 1 : 130 000
d) 1 : 7 000 000

61.3.1.0 (4206)
At 60° N the scale of a direct Mercator chart is 1 : 3 000 000.What is the scale at the equator?
a) 1 : 6 000 000
b) 1 : 3 000 000
c) 1 : 3 500 000
d) 1 : 1 500 000

61.3.1.0 (4207)
What is the chart distance between longitudes 179°E and 175°W on a direct Mercator chart with a scale of 1 : 5 000 000 at the equator?
a) 133 mm
b) 106 mm
c) 167 mm
d) 72 mm

61.3.1.0 (4208)
The total length of the 53°N parallel of latitude on a direct Mercator chart is 133 cm. What is the approximate scale of the chart at latitude 30°S?
a) 1 : 25 000 000
b) 1 : 30 000 000
c) 1 : 18 000 000
d) 1 : 21 000 000

61.3.1.0 (4209)
A Lambert conformal conic projection, with two standard parallels:
a) the scale is only correct along the standard parallels
b) shows all great circles as straight lines
c) the scale is only correct at parallel of origin
d) shows lines of longitude as parallel straight lines

61.3.1.0 (4210)
The constant of the cone, on a Lambert chart where the convergence angle between longitudes 010°E and 030°W is 30°, is:
a) 0.75
b) 0.40
c) 0.50
d) 0.64

61.3.1.0 (4211)
The constant of cone of a Lambert conformal conic chart is quoted as 0.3955. At what latitude on the chart is earth convergency correctly represented?
a) 23°18'
b) 66°42'
c) 68°25'
d) 21°35'

61.3.1.0 (4212)
On a Lambert Conformal chart the distance between meridians 5° apart along latitude 37° North is 9 cm. The scale of the chart at that parallel approximates:
a) 1 : 5 000 000
b) 1 : 3 750 000
c) 1 : 2 000 000
d) 1 : 6 000 000

61.3.1.0 (4213)
The chart distance between meridians 10° apart at latitude 65° North is 3.75 inches. The chart scale at this latitude approximates:
a) 1 : 5 000 000
b) 1 : 6 000 000
c) 1 : 2 500 000
d) 1 : 3 000 000

61.3.1.0 (4214)
On a Lambert conformal conic chart, with two standard parallels, the quoted scale is correct:
a) along the two standard parallels
b) in the area between the standard parallels
c) along the parallel of origin
d) along the prime meridian

61.3.1.0 (4215)
The convergence factor of a Lambert conformal conic chart is quoted as 0.78535. At what latitude on the chart is earth convergency correctly represented?
a) 51°45'
b) 52°05'
c) 80°39'
d) 38°15'

61.3.1.0 (4216)
At 47° North the chart distance between meridians 10° apart is 5 inches. The scale of the chart at 47° North approximates:
a) 1 : 6 000 000
b) 1 : 8 000 000
c) 1 : 3 000 000
d) 1 : 2 500 000

61.3.1.0 (4217)
On a Lambert Conformal Conic chart earth convergency is most accurately represented at the:
a) parallel of origin
b) north and south limits of the chart
c) standard parallels
d) Equator

61.3.1.0 (4218)
On a Transverse Mercator chart, scale is exactly correct along the:
a) meridian of tangency
b) Equator, parallel of origin and prime vertical
c) datum meridian and meridian perpendicular to it
d) prime meridian and the equator

61.3.1.0 (4219)
Approximately how many nautical miles correspond to 12 cm on a map with a scale of 1 : 2 000 000?
a) 130
b) 150
c) 329
d) 43

61.3.1.0 (4220)
Transverse Mercator projections are used for:
a) maps of large north/south extent
b) maps of large east/west extent in equatorial areas
c) radio navigation charts in equatorial areas
d) plotting charts in equatorial areas

61.3.1.0 (4221)
On a Direct Mercator chart at latitude 15°S, a certain length represents a distance of 120 NM on the earth. The same length on the chart will represent on the earth, at latitude 10°N, a distance of :
a) 122.3 NM
b) 117.7 NM
c) 124.2 NM
d) 118.2 NM

61.3.1.0 (4222)
On a Direct Mercator chart at latitude of 45°N, a certain length represents a distance of 90 NM on the earth. The same length on the chart will represent on the earth, at latitude 30°N, a distance of :
a) 110 NM
b) 73.5 NM
c) 78 NM
d) 45 NM

61.3.1.0 (4223)
On a transverse Mercator chart, the scale is exactly correct along the:
a) meridians of tangency
b) equator and parallel of origin
c) meridian of tangency and the parallel of latitude perpendicular to it
d) prime meridian and the equator

61.3.1.0 (4224)
On a transverse Mercator chart, with the exception of the Equator, parallels of latitude appear as:
a) ellipses
b) straight lines
c) hyperbolic lines
d) parabolas

61.3.1.0 (4225)
An Oblique Mercator projection is used specifically to produce:
a) charts of the great circle route between two points
b) radio navigational charts in equatorial regions
c) topographical maps of large east/ west extent
d) plotting charts in equatorial regions

61.3.1.0 (4226)
The two standard parallels of a conical Lambert projection are at N10°40'N and N41°20'.The cone constant of this chart is approximatively :
a) 0.44
b) 0.90
c) 0.66
d) 0.18

61.3.1.0 (4227)
On a chart, the distance along a meridian between latitudes 45°N and 46°N is 6 cm. The scale of the chart is approximately:
a) 1 : 1 850 000
b) 1 : 1 000 000
c) 1 : 185 000
d) 1 : 18 500 000

61.3.1.0 (4228)
Given:Chart scale is 1 : 1 850 000. The chart distance between two points is 4 centimetres. Earth distance is approximately :
a) 40 NM
b) 74 NM
c) 100 NM
d) 4 NM

61.3.1.0 (4229)
On a Mercator chart, at latitude 60°N, the distance measured between W002° and E008° is 20 cm. The scale of this chart at latitude 60°N is approximately:
a) 1 : 2 780 000
b) 1 : 278 000
c) 1 : 5 560 000
d) 1 : 556 000

61.3.1.0 (4230)
At latitude 60°N the scale of a Mercator projection is 1 : 5 000 000. The length on the chart between 'C' N60° E008° and 'D' N60° W008° is:
a) 17.8 cm
b) 16.2 cm
c) 35.6 cm
d) 19.2 cm

61.3.1.0 (4231)
Assume a Mercator chart.The distance between positions A and B, located on the same parallel and 10° longitude apart, is 6 cm. The scale at the parallel is 1 : 9 260 000.What is the latitude of A and B?
a) 60° N or S
b) 30° N or S

c) 0°
d) 45° N or S

61.3.1.0 (4232)
A straight line on a chart 4.89 cm long represents 185 NM.The scale of this chart is approximately :
a) 1 : 7 000 000
b) 1 : 3 500 000
c) 1 : 6 000 000
d) 1 : 5 000 000

61.3.1.0 (4233)
The scale on a Lambert conformal conic chart :
a) is constant along a parallel of latitude
b) is constant along a meridian of longitude
c) is constant across the whole map
d) varies slightly as a function of latitude and longitude

61.3.1.0 (4234)
A direct Mercator graticule is based on a projection that is :
a) cylindrical
b) conical
c) spherical
d) concentric

61.3.2.0 (4235)
Parallels of latitude on a Direct Mercator chart are :
a) parallel straight lines unequally spaced
b) parallel straight lines equally spaced
c) arcs of concentric circles equally spaced
d) straight lines converging above the pole

61.3.2.0 (4236)
A straight line on a Lambert Conformal Projection chart for normal flight planning purposes:
a) is approximately a Great Circle
b) is a Loxodromic line
c) is a Rhumb line
d) can only be a parallel of latitude

61.3.2.0 (4237)
On a Direct Mercator chart, a rhumb line appears as a:
a) straight line
b) small circle concave to the nearer pole
c) spiral curve
d) curve convex to the nearer pole

61.3.2.0 (4238)
On a Lambert Conformal Conic chart great circles that are not meridians are:
a) curves concave to the parallel of origin
b) straight lines regardless of distance
c) curves concave to the pole of projection
d) straight lines within the standard parallels

61.3.2.0 (4239)
On a Direct Mercator chart a great circle will be represented by a:
a) curve concave to the equator
b) complex curve
c) curve convex to the equator
d) straight line

61.3.2.0 (4240)
The angular difference, on a Lambert conformal conic chart, between the arrival and departure track is equal to:
a) map convergence
b) earth convergence
c) conversion angle
d) difference in longitude

61.3.2.0 (4241)
The parallels on a Lambert Conformal Conic chart are represented by:
a) arcs of concentric circles
b) straight lines
c) parabolic lines
d) hyperbolic lines

61.3.2.0 (4242)
Parallels of latitude, except the equator, are:
a) Rhumb lines
b) Great circles
c) both Rhumb lines and Great circles
d) are neither Rhumb lines nor Great circles

61.3.2.0 (4243)
On a Lambert chart (standard parallels 37°N and 65°N), with respect to the straight line drawn on the map between A (N49° W030°) and B (N48° W040°), the:
a) great circle and rhumb line are to the south
b) great circle and rhumb line are to the north
c) great circle is to the north, the rhumb line is to the south
d) rhumb line is to the north, the great circle is to the south

61.3.2.0 (4244)
On a Direct Mercator chart, meridians are:
a) parallel, equally spaced, vertical straight lines
b) inclined, equally spaced, straight lines that meet at the nearer pole
c) parallel, unequally spaced, vertical straight lines
d) inclined, unequally spaced, curved lines that meet at the nearer pole

61.3.2.0 (4245)
On which of the following chart projections is it NOT possible to represent the north or south poles?
a) Direct Mercator
b) Lambert's conformal
c) Transverse Mercator
d) Polar stereographic

61.3.2.0 (4246)
Which one of the following, concerning great circles on a Direct Mercator chart, is correct?
a) With the exception of meridians and the equator, they are curves concave to the equator
b) They are all curves concave to the equator
c) They approximate to straight lines between the standard parallels
d) They are all curves convex to the equator

61.3.2.0 (4247)
On a Lambert conformal conic chart, the distance between parallels of latitude spaced the same number of degrees apart :
a) reduces between, and expands outside, the standard parallels
b) is constant between, and expands outside, the standard parallels
c) expands between, and reduces outside, the standard parallels
d) is constant throughout the chart

61.3.2.0 (4248)
Which one of the following statements is correct concerning the appearance of great circles, with the exception of meridians, on a Polar Stereographic chart whose tangency is at the pole ?
a) The higher the latitude the closer they approximate to a straight line
b) Any straight line is a great circle
c) They are complex curves that can be convex and/or concave to the Pole
d) They are curves convex to the Pole

61.3.2.0 (4249)
Which one of the following describes the appearance of rhumb lines, except meridians, on a Polar Stereographic chart?
a) Curves concave to the Pole
b) Ellipses around the Pole
c) Curves convex to the Pole
d) Straight lines

61.3.2.0 (4250)
What is the value of the convergence factor on a Polar Stereographic chart?
a) 1.0
b) 0.866
c) 0.5
d) 0.0

61.3.2.0 (4251)
On a Direct Mercator, rhumb lines are:
a) straight lines
b) curves concave to the equator
c) ellipses
d) curves convex to the equator

61.3.3.0 (4252)
Contour lines on aeronautical maps and charts connect points :
a) having the same elevation above sea level
b) with the same variation
c) having the same longitude
d) of equal latitude

61.3.3.0 (4253)
On a Polar Stereographic chart, the initial great circle course from A 70°N 060°W to B 70°N 060°E is approximately:
a) 030° (T)
b) 330° (T)
c) 150° (T)
d) 210° (T)

61.3.3.0 (4254)
On a polar stereographic projection chart showing the South Pole, a straight line joins position A (70°S 065°E) to position B (70°S 025°W).The true course on departure from position A is approximately:
a) 225°
b) 250°
c) 135°
d) 315°

61.3.3.0 (4255)
Two positions plotted on a polar stereographic chart, A (80°N 000°) and B (70°N 102°W) are joined by a straight line whose highest latitude is reached at 035°W.At point B, the true course is:
a) 203°
b) 023°
c) 247°
d) 305°

61.3.3.0 (4256)
Given:Magnetic heading 311°Drift angle 10° leftRelative bearing of NDB 270°What is the magnetic bearing of the NDB measured from the aircraft?
a) 221°
b) 208°
c) 211°
d) 180°

61.3.3.0 (4257)
A Lambert conformal conic chart has a constant of the cone of 0.75. The initial course of a straight line track drawn on this chart from A (40°N 050°W) to B is 043°(T) at A, course at B is 055°(T). What is the longitude of B?
a) 34°W

b) 36°W
c) 38°W
d) 41°W

61.3.3.0 (4258)
A Lambert conformal conic chart has a constant of the cone of 0.80. A straight line course drawn on this chart from A (53°N 004°W) to B is 080° at A, course at B is 092°(T). What is the longitude of B?
a) 011°E
b) 009°36'E
c) 008°E
d) 019°E

61.3.3.0 (4259)
(For this question use annex 061-12400A)What are the average magnetic course and distance between INGO VOR (N6350 W01640) and Sumburg VOR (N5955 W 00115)?
a) 131° - 494 NM
b) 118° - 440 NM
c) 117° - 494 NM
d) 130° - 440 NM

61.3.3.0 (4260)
(For this question use annex 061-12401A)What are the average magnetic course and distance between position N6000 W02000 and Sumburg VOR (N5955 W 00115)?
a) 105° - 562 NM
b) 091° - 480 NM
c) 091° - 562 NM
d) 105° - 480 NM

61.3.3.0 (4261)
(For this question use annex 061-12402A)What are the initial true course and distance between positions N5800 W01300 and N6600 E00200?
a) 036° - 638 NM
b) 029° - 570 NM
c) 042° - 635 NM
d) 032° - 470 NM

61.3.3.0 (4262)
(For this question use annex 061-12403A)An aircraft on radial 315° at a range of 150 NM from MYGGENES NDB (N6206 W00732) is at position:
a) N6320 W01205
b) N6020 W00405
c) N6345 W01125
d) N6040 W00320

61.3.3.0 (4263)
(For this question use annex 061-12404A)An aircraft on radial 110° at a range of 120 NM from SAXAVORD VOR (N6050 W00050) is at position:
a) N6027 E00307
b) N6127 W00443
c) N6010 E00255
d) N6109 E00255

61.3.3.0 (4264)
(For this question use annex 061-12405A)Which of the following beacons is 185 NM from AKRABERG (N6124 W00640)?
a) SUMBURGH (N5955 W00115)
b) SAXAVORD (N6050 W00050)
c) KIRKWALL (N5858 W 00254)
d) STORNOWAY (N5815 W00617)

61.3.3.0 (4265)
(For this question refer to annex 061-12608A)What feature is shown on the chart at position N5417 W01005?
a) EAGLE ISLAND LT.H. NDB
b) Belmullet aerodrome
c) Carnmore aerodrome
d) Clonbullogue aerodrome

61.3.3.0 (4266)
(For this question refer to annex 061-12609A)Which of the following lists all the aeronautical chart symbols shown at position N5150.4 W00829.7?
a) civil airport: VOR: DME: compulsory reporting point
b) civil airport: VOR: non-compulsory reporting point
c) VOR: DME: NDB:compulsory reporting point
d) VOR: DME: NDB: ILS

61.3.3.0 (4267)
(For this question refer to annex 061-12610A)Which of the following lists all the aeronautical chart symbols shown at position N5318.0 W00626.9?
a) military airport: VOR: DME
b) civil airport: VOR: DME
c) military airport: VOR: NDB
d) VOR: DME: danger area

61.3.3.0 (4268)
(For this question refer to annex 061-12611A)Which of the following lists all the aeronautical chart symbols shown at position N5416.7 W00836.0?
a) civil airport: NDB: DME: compulsory reporting point
b) VOR: DME: NDB: compulsory reporting point
c) civil airport: VOR: DME: non-compulsory reporting point
d) VOR: DME: NDB: non-compulsory reporting point

61.3.3.0 (4269)
(For this question refer to annex 061-12612A)Which of the following lists all the aeronautical chart symbols shown at position N5318.1 W00856.5?
a) civil airport: NDB: DME: non-compulsory reporting point
b) VOR: DME: NDB: compulsory reporting point
c) civil airport: VOR: DME: non-compulsory reporting point
d) VOR: DME: NDB: compulsory reporting point

61.3.3.0 (4270)
(For this question refer to annex 061-12613A)Which of the following lists all the aeronautical chart symbols shown at position N5211 W00705?
a) civil airport: NDB
b) VOR: NDB
c) civil airport: ILS
d) NDB: ILS

61.3.3.0 (4271)
(For this question refer to annex 061-12614A)Which of the aeronautical chart symbols indicates a VOR/DME?
a) 1
b) 2
c) 6
d) 7

61.3.3.0 (4272)
(For this question refer to annex 061-12615A)Which of the aeronautical chart symbols indicates a DME?
a) 2
b) 3
c) 5
d) 6

61.3.3.0 (4273)
(For this question refer to annex 061-12616A)Which of the aeronautical chart symbols indicates a VOR?
a) 3
b) 5
c) 6
d) 2

61.3.3.0 (4274)
(For this question refer to annex 061-12617A)Which of the aeronautical chart symbols indicates an NDB?
a) 4
b) 6
c) 2
d) 3

61.3.3.0 (4275)
(For this question use annex 061-12576A)What is the average track (°T) and distance between BAL VOR (N5318.0 W00626.9) and CRN NDB (N5318.1 W00856.5)?
a) 270° - 90 NM
b) 278° - 89 NM
c) 268° - 91 NM
d) 272° - 89 NM

61.3.3.0 (4276)
(For this question use annex 061-12577A)What is the average track (°T) and distance between BAL VOR (N5318.0 W00626.9) and CFN NDB (N5502.6 W00820.4)?
a) 327° - 124 NM
b) 335° - 128 NM
c) 325° - 126 NM
d) 320° - 127 NM

61.3.3.0 (4277)
(For this question use annex 061-12578A)What is the average track (°T) and distance between CRN NDB (N5318.1 W00856.5) and EKN NDB (N5423.6 W00738.7)?
a) 035° - 80 NM
b) 042° - 83 NM
c) 036° - 81 NM
d) 044° - 82 NM

61.3.3.0 (4278)
(For this question use annex 061-12579A)Given: SHA VOR (N5243.3 W00853.1) radial 223°,CRK VOR (N5150.4 W00829.7) radial 322°.What is the aircraft position?
a) N5220 W00920
b) N5230 W00910
c) N5210 W00910
d) N5210 W00930

61.3.3.0 (4279)
(For this question use annex 061-12580A)Given: SHA VOR (N5243.3 W00853.1) radial 205°,CRK VOR (N5150.4 W00829.7) radial 317°.What is the aircraft position?
a) N5210 W00910
b) N5118 W00913
c) N5205 W00915
d) N5215 W00917

61.3.3.0 (4280)
(For this question use annex 061-12590A)Given:SHA VOR N5243.3 W00853.1CRK VOR N5150.4 W00829.7Aircraft position N5230 W00820Which of the following lists two radials that are applicable to the aircraft position?
a) SHA 131°CRK 017°
b) SHA 304°CRK 189°
c) SHA 312°CRK 197°
d) SHA 124°CRK 009°

61.3.3.0 (4281)
(For this question use annex 061-12591A)Given:SHA VOR N5243.3 W00853.1CRK VOR N5150.4 W00829.7Aircraft position N5230 W00930Which of the following lists two radials that are applicable to the aircraft position?
a) SHA 248°CRK 325°
b) SHA 068°CRK 145°
c) SHA 060°CRK 138°
d) SHA 240°CRK 137°

61.3.3.0 (4282)
(For this question use annex 061-12592A)Given:SHA VOR N5243.3 W00853.1CON VOR N5354.8 W00849.1Aircraft position N5330 W00800Which of the following lists two radials that are applicable to the aircraft position?
a) SHA 042°CON 138°
b) SHA 213°CON 310°
c) SHA 033°CON 130°
d) SHA 221°CON 318°

61.3.3.0 (4283)
(For this question use annex 061-12593A)Given:SHA VOR N5243.3 W00853.1CON VOR N5354.8 W00849.1Aircraft position N5320 W00950Which of the following lists two radials that are applicable to the aircraft position?
a) SHA 325°CON 235°
b) SHA 137°CON 046°
c) SHA 317°CON 226°
d) SHA 145°CON 055°

61.3.3.0 (4284)
(For this question use annex 061-12594A)Given:SHA VOR (N5243.3 W00853.1) DME 50 NM,CRK VOR (N5150.4 W00829.7) DME 41 NM,Aircraft heading 270° (M),Both DME distances increasing.What is the aircraft position?
a) N5200 W00935
b) N5215 W00940
c) N5215 W00745
d) N5235 W00750

61.3.3.0 (4285)
(For this question use annex 061-12595A)Given:SHA VOR (N5243.3 W00853.1) DME 41 NM,CRK VOR (N5150.4 W00829.7) DME 30 NM,Aircraft heading 270° (M),Both DME distances decreasing.What is the aircraft position?
a) N5215 W00805
b) N5205 W00915
c) N5215 W00915
d) N5225 W00810

61.3.3.0 (4286)
(For this question use annex 061-12596A)Given:CRN VOR (N5318.1 W00856.5) DME 18 NM,SHA VOR (N5243.3 W00853.1) DME 30 NM,Aircraft heading 270° (M),Both DME distances decreasing.What is the aircraft position?
a) N5310 W00830
b) N5252 W00923
c) N5307 W00923
d) N5355 W00825

61.3.3.0 (4287)
(For this question use annex 061-12597A)Given:CRN VOR (N5318.1 W00856.5) DME 34 NM,SHA VOR (N5243.3 W00853.1) DME 26 NM,Aircraft heading 090° (M),Both DME distances increasing.What is the aircraft position?
a) N5255 W00815
b) N5250 W0030
c) N5305 W00930
d) N5310 W00820

61.3.3.0 (4288)
(For this question use annex 061-12598A)Given:CON VOR (N5354.8 W00849.1) DME 30 NM,CRN VOR (N5318.1 W00856.5) DME 25 NM,Aircraft heading 270° (M),Both DME distances decreasing.What is the aircraft position?
a) N5330 W00820
b) N5343 W00925
c) N5335 W00925
d) N5337 W00820

61.3.3.0 (4289)
(For this question refer to annex 061-12599A)Given:CRK VOR/DME (N5150.4 W00829.7)Kerry aerodrome (N5210.9 W00931.4)What is the CRK radial and DME distance when overhead Kerry aerodrome?
a) 307° - 43 NM
b) 119° - 44 NM
c) 127° - 45 NM
d) 299° - 42 NM

61.3.3.0 (4290)
(For this question refer to annex 061-12600A)Given:SHA VOR/DME (N5243.3 W00853.1)Birr aerodrome (N5304 W00754)What is the SHA radial and DME distance when overhead Birr aerodrome?
a) 068° - 41 NM
b) 248° - 42 NM
c) 060° - 42 Nm
d) 240° - 41 NM

61.3.3.0 (4291)
(For this question refer to annex 061-12601A)Given:SHA VOR/DME (N5243.3 W00853.1)Connemara aerodrome (N5314 W00928)What is the SHA radial and DME distance when overhead Connemara aerodrome?
a) 333° - 37 NM
b) 154° - 38 NM
c) 326° - 37 NM
d) 146° - 38 NM

61.3.3.0 (4292)
(For this question refer to annex 061-12602A)Given:CON VOR/DME (N5354.8 W00849.1)Castlebar aerodrome (N5351 W00917)What is the CON radial and DME distance when overhead Castlebar aerodrome?
a) 265° - 17 NM
b) 077° - 18 NM
c) 257° - 17 NM
d) 086° - 18 NM

61.3.3.0 (4293)
(For this question use annex 061-12560A)What is the radial and DME distance from CON VOR/DME (N5354.8 W00849.1) to position N5330 W00930?

a) 233° - 35 NM
b) 165° - 27 NM
c) 335° - 43 NM
d) 025° - 38 NM

61.3.3.0 (4294)
(For this question use annex 061-12561A)What is the radial and DME distance from BEL VOR/DME (N5439.7 W00613.8) to position N5410 W00710?
a) 236° - 44 NM
b) 223° - 36 NM
c) 320° - 44 NM
d) 333° - 36 NM

61.3.3.0 (4295)
(For this question use annex 061-12562A)What is the radial and DME distance from BEL VOR/DME (N5439.7 W00613.8) to position N5440 W00730?
a) 278° - 44 NM
b) 090° - 46 NM
c) 278° - 10 NM
d) 098° - 45 NM

61.3.3.0 (4296)
(For this question use annex 061-12563A)What is the radial and DME distance from BEL VOR/DME (N5439.7 W00613.8) to position N5500 W00700?
a) 315° - 34 NM
b) 296° - 65 NM
c) 126° - 33 NM
d) 222° - 48 NM

61.3.3.0 (4297)
(For this question use annex 061-12564A)What is the average track (°M) and distance between WTD NDB (N5211.3 W00705.0) and KER NDB (N5210.9 W00931.5)?
a) 278° - 90 NM
b) 090° - 91 NM
c) 270° - 89 NM
d) 098° - 90 NM

61.3.3.0 (4298)
(For this question use annex 061-12565A)What is the average track (°M) and distance between CRK VOR (N5150.4 W00829.7) and CRN NDB (N5318.1 W00856.5)?
a) 357° - 89 NM
b) 169° - 91 NM
c) 349° - 90 NM
d) 177° - 92 NM

61.3.3.0 (4299)
(For this question use annex 061-12566A)What is the average track (°M) and distance between CRN NDB (N5318.1 W00856.5) and WTD NDB (N5211.3 W00705.0)?
a) 142° - 95 NM
b) 315° - 94 NM
c) 135° - 96 NM
d) 322° - 95 NM

61.3.3.0 (4300)
(For this question refer to annex 061-12635A)What is the meaning of aeronautical chart symbol No. 15?
a) Aeronautical ground light
b) Visual reference point
c) Hazard to aerial navigation
d) Lighthouse

61.3.3.0 (4301)
(For this question refer to annex 061-12636A)What is the meaning of aeronautical chart symbol No. 16?
a) Lightship
b) Off-shore helicopter landing platform
c) Shipwreck showing above the surface at low tide
d) Off-shore lighthouse

61.3.3.0 (4302)
(For this question refer to annex 061-12637A)Which aeronautical chart symbol indicates an aeronautical ground light?
a) 15
b) 16
c) 10
d) 14

61.3.3.0 (4303)
(For this question refer to annex 061-12638A)Which aeronautical chart symbol indicates a lightship?
a) 16
b) 10
c) 12
d) 14

61.3.3.0 (4304)
(For this question refer to annex 061-12624A)Which aeronautical chart symbol indicates an uncontrolled route?
a) 4
b) 5
c) 2
d) 3

61.3.3.0 (4305)
(For this question refer to annex 061-12625A)Which aeronautical chart symbol indicates the boundary of advisory airspace?
a) 5
b) 2

c) 3
d) 4

61.3.3.0 (4306)
(For this question refer to annex 061-12626A)Which aeronautical chart symbol indicates a non-compulsory reporting point?
a) 6
b) 7
c) 8
d) 15

61.3.3.0 (4307)
(For this question refer to annex 061-12627A)Which aeronautical chart symbol indicates a compulsory reporting point?
a) 7
b) 8
c) 15
d) 6

61.3.3.0 (4308)
(For this question refer to annex 061-12628A)Which aeronautical chart symbol indicates a Way-point?
a) 8
b) 15
c) 6
d) 7

61.3.3.0 (4309)
(For this question refer to annex 061-12629A)Which aeronautical chart symbol indicates an unlighted obstacle?
a) 9
b) 10
c) 11
d) 12

61.3.3.0 (4310)
(For this question refer to annex 061-12630A)Which aeronautical chart symbol indicates a lighted obstacle?
a) 10
b) 11
c) 12
d) 9

61.3.3.0 (4311)
(For this question refer to annex 061-12631A)Which aeronautical chart symbol indicates a group of unlighted obstacles?
a) 11
b) 12
c) 13
d) 9

61.3.3.0 (4312)
(For this question refer to annex 061-12632A)Which aeronautical chart symbol indicates a group of lighted obstacles?
a) 12
b) 9
c) 10
d) 11

61.3.3.0 (4313)
(For this question refer to annex 061-12633A)Which aeronautical chart symbol indicates an exceptionally high unlighted obstacle?
a) 13
b) 14
c) 9
d) 11

61.3.3.0 (4314)
(For this question refer to annex 061-12634A)Which aeronautical chart symbol indicates an exceptionally high lighted obstacle?
a) 14
b) 10
c) 12
d) 13

61.3.3.0 (4315)
(For this question use annex 061-12567A)What is the average track (°M) and distance between WTD NDB (N5211.3 W00705.0) and BAL VOR (N5318.0 W00626.9)?
a) 026° - 71 NM
b) 018° - 153 NM
c) 206° - 71 NM
d) 198° - 72 NM

61.3.3.0 (4316)
(For this question use annex 061-12568A)What is the average track (°M) and distance between KER NDB (N5210.9 W00931.5) and CRN NDB (N5318.1 W00856.5)?
a) 025° - 70 NM
b) 197° - 71 NM
c) 205° - 71 NM
d) 017° - 70 NM

61.3.3.0 (4317)
(For this question use annex 061-12569A)What is the average track (°M) and distance between BAL VOR (N5318.0 W00626.9) and SLG NDB (N5416.7 W00836.0)?
a) 316° - 96 NM
b) 262° - 86 NM
c) 128° - 99 NM
d) 308° - 98 NM

61.3.3.0 (4318)
(For this question use annex 061-12570A)What is the average track (°M) and distance between CRN NDB (N5318.1 W00856.5) and BEL VOR (N5439.7 W00613.8)?
a) 057° - 126 NM
b) 089° - 95 NM
c) 229° - 125 NM
d) 237° - 130 NM

61.3.3.0 (4319)
(For this question use annex 061-12571A)What is the average track (°T) and distance between CON VOR (N5354.8 W00849.1) and BEL VOR (N5439.7 W00613.8)?
a) 063° - 101 NM
b) 071° - 100 NM
c) 113° - 97 NM
d) 293° - 98 NM

61.3.3.0 (4320)
(For this question use annex 061-12572A)What is the average track (°T) and distance between SLG NDB (N5416.7 W00836.0) and CFN NDB (N5502.6 W00820.4)?
a) 011° - 47 NM
b) 020° - 46 NM
c) 348° - 46 NM
d) 191° - 45 NM

61.3.3.0 (4321)
(For this question use annex 061-12573A)What is the average track (°T) and distance between WTD NDB (N5211.3 W00705.0) and FOY NDB (N5234.0 W00911.7)?
a) 286° - 81 NM
b) 294° - 80 NM
c) 075° - 81 NM
d) 277° - 83 NM

61.3.3.0 (4322)
(For this question use annex 061-12574A)What is the average track (°T) and distance between WTD NDB (N5211.3 W00705.0) and SLG NDB (N5416.7 W00836.0)?
a) 336° - 137 NM
b) 344° - 139 NM
c) 156° - 136 NM
d) 164° - 138 NM

61.3.3.0 (4323)
(For this question use annex 061-12575A)What is the average track (°T) and distance between SHA VOR (N5243.3 W00853.1) and CON VOR (N5354.8 W00849.1)?
a) 002° - 72 NM
b) 010° - 71 NM
c) 358° - 72 NM
d) 006° - 71 NM

61.3.3.0 (4324)
(For this question refer to annex 061-12603A)Given:CON VOR/DME (N5354.8 W00849.1)Abbey Shrule aerodrome (N5335 W00739)What is the CON radial and DME distance when overhead Abbey Shrule aerodrome?
a) 124° - 46 NM
b) 116° - 47 NM
c) 296° - 46 NM
d) 304° - 47 NM

61.3.3.0 (4325)
(For this question refer to annex 061-12604A)What feature is shown on the chart at position N5211 W00931?
a) KERRY/Farranfore aerodrome
b) Waterford NDB
c) Connemara aerodrome
d) Punchestown aerodrome

61.3.3.0 (4326)
(For this question refer to annex 061-12605A)What feature is shown on the chart at position N5212 W00612?
a) TUSKAR ROCK LT.H. NDB
b) WTD NDB
c) KERRY/Farranfore aerodrome
d) Clonbullogue aerodrome

61.3.3.0 (4327)
(For this question refer to annex 061-12606A)What feature is shown on the chart at position N5311 W00637?
a) Punchestown aerodrome
b) Connemara aerodrome
c) KERRY/Farranfore aerodrome
d) Clonbullogue aerodrome

61.3.3.0 (4328)
(For this question refer to annex 061-12607A)What feature is shown on the chart at position N5351 W00917?
a) Castlebar aerodrome
b) Connaught aerodrome
c) Connemara aerodrome
d) Brittas Bay aerodrome

61.3.3.0 (4329)
(For this question refer to annex 061-12618A)Which of the aeronautical chart symbols indicates a basic, non-specified, navigation aid?
a) 5
b) 6
c) 2
d) 3

61.3.3.0 (4330)
(For this question refer to annex 061-12619A)Which of the aeronautical chart symbols indicates a TACAN?
a) 6
b) 7
c) 1
d) 2

61.3.3.0 (4331)
(For this question refer to annex 061-12620A)Which of the aeronautical chart symbols indicates a VORTAC?
a) 7
b) 1
c) 3
d) 6

61.3.3.0 (4332)
(For this question refer to annex 061-12621A)Which aeronautical chart symbol indicates a Flight Information Region (FIR) boundary?
a) 1
b) 3
c) 4
d) 5

61.3.3.0 (4333)
(For this question refer to annex 061-12623A)Which aeronautical chart symbol indicates a Control Zone boundary?
a) 3
b) 4
c) 5
d) 2

61.3.3.0 (4334)
At 0020 UTC an aircraft is crossing the 310° radial at 40 NM of a VOR/DME station.At 0035 UTC the radial is 040° and DME distance is 40 NM.Magnetic variation is zero.The true track and ground speed are :
a) 085° - 226 kt
b) 090° - 232 kt
c) 080° - 226 kt
d) 088° - 232 kt

61.3.3.0 (4335)
Given:An aircraft is flying a track of 255°(M),2254 UTC, it crosses radial 360° from a VOR station, 2300 UTC, it crosses radial 330° from the same station.At 2300 UTC, the distance between the aircraft and the station is :
a) the same as it was at 2254 UTC
b) greater than it was at 2254 UTC
c) randomly different than it was at 2254 UTC
d) less than it was at 2254 UTC

61.3.3.0 (4336)
(For this question use annex 061-12581A)Given: SHA VOR (N5243.3 W00853.1) radial 120°,CRK VOR (N5150.4 W00829.7) radial 033°.What is the aircraft position?
a) N5230 W00800
b) N5225 W00805
c) N5220 W00750
d) N5240 W00750

61.3.3.0 (4337)
(For this question use annex 061-12582A)Given: SHA VOR (N5243.3 W00853.1) radial 129°,CRK VOR (N5150.4 W00829.7) radial 047°.What is the aircraft position?
a) N5220 W00750
b) N5215 W00755
c) N5210 W00750
d) N5205 W00755

61.3.3.0 (4338)
(For this question use annex 061-12583A)Given: SHA VOR (N5243.3 W00853.1) radial 143°,CRK VOR (N5150.4 W00829.7) radial 050°.What is the aircraft position?
a) N5210 W00800
b) N5155 W00810
c) N5205 W00805
d) N5200 W00800

61.3.3.0 (4339)
(For this question use annex 061-12584A)Given: SHA VOR/DME (N5243.3 W00853.1) radial 120°/35 NM.What is the aircraft position?
a) N5230 W00800
b) N5300 W00945
c) N5225 W00805
d) N5250 W00950

61.3.3.0 (4340)
(For this question use annex 061-12585A)Given: SHA VOR/DME (N5243.3 W00853.1) radial 165°/36 NM.What is the aircraft position?
a) N5210 W00830
b) N5208 W00840
c) N5315 W00915
d) N5317 W00908

61.3.3.0 (4341)
(For this question use annex 061-12586A)Given: SHA VOR/DME (N5243.3 W00853.1) radial 232°/32 NM.What is the aircraft position?
a) N5220 W00930
b) N5305 W00815
c) N5228 W00935
d) N5303 W00810

61.3.3.0 (4342)
(For this question use annex 061-12587A)Given: SHA VOR/DME (N5243.3 W00853.1) radial 025°/49 NM.What is the aircraft position?
a) N5330 W00830
b) N5328 W00820
c) N5155 W00915
d) N5200 W0925

61.3.3.0 (4343)
(For this question use annex 061-12588A)Given: SHA VOR/DME (N5243.3 W00853.1) radial 048°/22 NM.What is the aircraft position?
a) N5300 W0830
b) N5258 W00825
c) N5225 W00917
d) N5228 W00920

61.3.3.0 (4344)
(For this question use annex 061-12589A)Given:SHA VOR N5243.3 W00853.1CRK VOR N5150.4 W00829.7Aircraft position N5220 W00910Which of the following lists two radials that are applicable to the aircraft position?
a) SHA 212°CRK 328°
b) SHA 025°CRK 141°
c) SHA 205°CRK 321°
d) SHA 033°CRK 149°

61.3.3.0 (4345)
A course of 120°(T) is drawn between 'X' (61°30'N) and 'Y' (58°30'N) on a Lambert Conformal conic chart with a scale of 1 : 1 000 000 at 60°N. The chart distance between 'X' and 'Y' is:
a) 66.7 cm
b) 33.4 cm
c) 38.5 cm
d) 36.0 cm

61.3.3.0 (4346)
Route 'A' (44°N 026°E) to 'B' (46°N 024°E) forms an angle of 35° with longitude 026°E. Average magnetic variation between 'A' and 'B' is 3°E.What is the average magnetic course from 'A' to 'B'?
a) 322°
b) 328°
c) 032°
d) 038°

61.3.3.0 (4347)
Given:Direct Mercator chart with a scale of 1 : 200 000 at equator,Chart length from 'A' to 'B', in the vicinity of the equator, 11 cm.What is the approximate distance from 'A' to 'B'?
a) 12 NM
b) 21 NM
c) 22 NM
d) 14 NM

61.3.3.0 (4348)
(For this question use annex 061-12549A)What is the radial and DME distance from CRK VOR/DME (N5150.4 W00829.7) to position N5220 W00810?
a) 030° - 33 NM
b) 048° - 40 NM
c) 014° - 33 NM
d) 220° - 40 NM

61.3.3.0 (4349)
(For this question use annex 061-12550A)What is the radial and DME distance from CRK VOR/DME (N5150.4 W00829.7) to position N5210 W00920?
a) 311° - 38 NM
b) 350° - 22 NM
c) 295° - 38 NM
d) 170° - 22 NM

61.3.3.0 (4350)
(For this question use annex 061-12551A)What is the radial and DME distance from CRK VOR/DME (N5150.4 W00829.7) to position N5230 W00750?
a) 039° - 48 NM
b) 024° - 43 NM
c) 023° - 48 NM
d) 017° - 43 NM

61.3.3.0 (4351)
(For this question use annex 061-12552A)What is the radial and DME distance from CRK VOR/DME (N5150.4 W00829.7) to position N5140 W00730?
a) 113° - 38 NM
b) 104° - 76 NM
c) 293° - 39 NM
d) 106° - 38 NM

61.3.3.0 (4352)
(For this question use annex 061-12553A)What is the radial and DME distance from SHA VOR/DME (N5243.3 W00853.1) to position N5300 W00940?
a) 309° - 33 NM
b) 057° - 27 NM
c) 293° - 33 NM
d) 324° - 17 NM

61.3.3.0 (4353)
(For this question use annex 061-12554A)What is the radial and DME distance from SHA VOR/DME (N5243.3 W00853.1) to position N5310 W00830?
a) 035° - 30 NM
b) 070° - 58 NM
c) 207° - 31 NM
d) 019° - 31 NM

61.3.3.0 (4354)
(For this question use annex 061-12555A)What is the radial and DME distance from SHA VOR/DME (N5243.3 W00853.1) to position N5220 W00810?

a) 139° - 35 NM
b) 129° - 46 NM
c) 132° - 36 NM
d) 212° - 26 NM

61.3.3.0 (4355)
(For this question use annex 061-12556A)What is the radial and DME distance from SHA VOR/DME (N5243.3 W00853.1)to position N5210 W00920?
a) 214° - 37 NM
b) 354° - 34 NM
c) 198° - 37 NM
d) 346° - 34 NM

61.3.3.0 (4356)
(For this question use annex 061-12557A)What is the radial and DME distance from CON VOR/DME (N5354.8 W00849.1) to position N5430 W00900?
a) 358° - 36 NM
b) 214° - 26 NM
c) 049° - 45 NM
d) 169° - 35 NM

61.3.3.0 (4357)
(For this question use annex 061-12558A)What is the radial and DME distance from CON VOR/DME (N5354.8 W00849.1) to position N5400 W00800?
a) 088° - 29 NM
b) 320° - 8 NM
c) 094° - 64 NM
d) 260° - 30 NM

61.3.3.0 (4358)
(For this question use annex 061-12559A)What is the radial and DME distance from CON VOR/DME (N5354.8 W00849.1) to position N5340 W00820?
a) 140° - 23 NM
b) 119° - 42 NM
c) 311° - 22 NM
d) 240° - 24 NM

61.4.1.0 (4359)
Given the following:True track: 192°Magnetic variation: 7°EDrift angle: 5° leftWhat is the magnetic heading required to maintain the given track?
a) 190°
b) 194°
c) 204°
d) 180°

61.4.1.0 (4360)
Given the following:Magnetic heading: 060°Magnetic variation: 8°WDrift angle: 4° rightWhat is the true track?
a) 056°
b) 064°
c) 048°
d) 072°

61.4.1.0 (4361)
Given: True track 180°Drift 8°RCompass heading 195°Deviation -2°Calculate the variation?
a) 21°W
b) 25°W
c) 5°W
d) 9°W

61.4.1.0 (4362)
Given: True course 300°drift 8°Rvariation 10°Wdeviation -4° Calculate the compass heading?
a) 306°
b) 322°
c) 294°
d) 278°

61.4.1.0 (4363)
Given:true track 352°variation 11° Wdeviation is -5°drift 10°R.Calculate the compass heading?
a) 358°
b) 346°
c) 018°
d) 025°

61.4.1.0 (4364)
Given:true track 070°variation 30°Wdeviation +1°drift 10°RCalculate the compass heading?
a) 089°
b) 091°
c) 100°
d) 101°

61.4.1.0 (4365)
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?
a) 069° - 448 kt
b) 068° - 460 kt
c) 078° - 450 kt
d) 070° - 453 kt

61.4.1.0 (4366)
Given: True course A to B = 250°Distance A to B = 315 NMTAS = 450 kt. W/V = 200°/60kt.ETD A = 0650 UTC.What is the ETA at B?
a) 0736 UTC
b) 0730 UTC
c) 0810 UTC
d) 0716 UTC

61.4.1.0 (4367)
Given: GS = 510 kt.Distance A to B = 43 NMWhat is the time (MIN) from A to B?
a) 5
b) 4
c) 6
d) 7

61.4.1.0 (4368)
Given: GS = 122 kt.Distance from A to B = 985 NM.What is the time from A to B?
a) 8 HR 04 MIN
b) 7 HR 48 MIN
c) 7 HR 49 MIN
d) 8 HR 10 MIN

61.4.1.0 (4369)
Given: GS = 236 kt.Distance from A to B = 354 NMWhat is the time from A to B?
a) 1 HR 30 MIN
b) 1 HR 09 MIN
c) 1 HR 10 MIN
d) 1 HR 40 MIN

61.4.1.0 (4370)
Given: GS = 435 kt.Distance from A to B = 1920 NM.What is the time from A to B?
a) 4 HR 25 MIN
b) 3 HR 25 MIN
c) 3 HR 26 MIN
d) 4 HR 10 MIN

61.4.1.0 (4371)
Given: GS = 345 kt.Distance from A to B = 3560 NM.What is the time from A to B?
a) 10 HR 19 MIN
b) 10 HR 05 MIN
c) 11 HR 00 MIN
d) 11 HR 02 MIN

61.4.1.0 (4372)
Given: GS = 480 kt.Distance from A to B = 5360 NM.What is the time from A to B?
a) 11 HR 10 MIN
b) 11 HR 06 MIN
c) 11 HR 07 MIN
d) 11 HR 15 MIN

61.4.1.0 (4373)
Given: GS = 95 kt.Distance from A to B = 480 NM.What is the time from A to B?
a) 5 HR 03 MIN
b) 4 HR 59 MIN
c) 5 HR 00 MIN
d) 5 HR 08 MIN

61.4.1.0 (4374)
Given: GS = 105 kt.Distance from A to B = 103 NM.What is the time from A to B?
a) 00 HR 59 MIN
b) 00 HR 57 MIN
c) 00 HR 58 MIN
d) 01 HR 01 MIN

61.4.1.0 (4375)
Given: GS = 120 kt.Distance from A to B = 84 NM.What is the time from A to B?
a) 00 HR 42 MIN
b) 00 HR 43 MIN
c) 00 HR 44 MIN
d) 00 HR 45 MIN

61.4.1.0 (4376)
Given: GS = 135 kt.Distance from A to B = 433 NM.What is the time from A to B?
a) 3 HR 12 MIN
b) 3 HR 25 MIN
c) 3 HR 19 MIN
d) 3 HR 20 MIN

61.4.1.0 (4377)
The ICAO definition of ETA is the:
a) estimated time of arrival at destination
b) actual time of arrival at a point or fix
c) estimated time of arrival at an en-route point or fix
d) estimated time en route

61.4.1.0 (4378)
Given:Required course 045°(M),Variation is 15°E,W/V is 190°(T)/30 kt,CAS is 120 kt at FL 55 in standard atmosphere.What are the heading (°M) and GS?
a) 055° and 147 kt
b) 036° and 151 kt
c) 052° and 154 kt
d) 056° and 137 kt

61.4.1.0 (4379)
Given:Course 040°(T),TAS is 120 kt,Wind speed 30 kt.Maximum drift angle will be obtained for a wind direction of:
a) 130°
b) 145°
c) 115°
d) 120°

61.4.2.0 (4380)
How many NM would an aircraft travel in 1 MIN 45 SEC if GS is 135 kt?
a) 3.94
b) 2.36
c) 3.25
d) 39.0

61.4.2.0 (4381)
Fuel flow per HR is 22 US-GAL, total fuel on board is 83 IMP GAL.What is the endurance?
a) 4 HR 32 MIN
b) 3 HR 12 MIN
c) 3 HR 53 MIN
d) 2 HR 15 MIN

61.4.2.0 (4382)
What is the ratio between the litre and the US-GAL ?
a) 1 US-GAL equals 3.78 litres
b) 1 litre equals 3.78 US-GAL
c) 1 US-GAL equals 4.55 litres
d) 1 litre equals 4.55 US-GAL

61.4.2.0 (4383)
265 US-GAL equals? (Specific gravity 0.80)
a) 803 kg
b) 862 kg
c) 895 kg
d) 940 kg

61.4.2.0 (4384)
730 FT/MIN equals:
a) 3.7 m/sec
b) 5.2 m/sec
c) 1.6 m/sec
d) 2.2 m/sec

61.4.2.0 (4385)
How long will it take to fly 5 NM at a groundspeed of 269 Kt ?
a) 1 MIN 07 SEC
b) 1 MIN 55 SEC
c) 2 MIN 30 SEC
d) 0 MIN 34 SEC

61.4.2.0 (4386)
An aircraft travels 2.4 statute miles in 47 seconds. What is its groundspeed?
a) 160 kt
b) 183 kt
c) 209 kt
d) 131 kt

61.4.2.0 (4387)
An aircraft travels 100 statute miles in 20 MIN, how long does it take to travel 215 NM?
a) 50 MIN
b) 100 MIN
c) 90 MIN
d) 80 MIN

61.4.2.0 (4388)
The equivalent of 70 m/sec is approximately:
a) 136 kt
b) 145 kt
c) 210 kt
d) 35 kt

61.4.2.0 (4389)
Given:IAS 120 kt,FL 80,OAT +20°C. What is the TAS?
a) 141 kt
b) 102 kt
c) 120 kt
d) 132 kt

61.4.3.0 (4390)
An aircraft is following a true track of 048° at a constant TAS of 210 kt. The wind velocity is 350° / 30 kt. The GS and drift angle are:
a) 192 kt, 7° right
b) 200 kt, 3.5° right
c) 192 kt, 7° left
d) 225 kt, 7° left

61.4.3.0 (4391)
For a given track the:Wind component = +45 ktDrift angle = 15° leftTAS = 240 ktWhat is the wind component on the reverse track?
a) -65 kt
b) -55 kt
c) -45 kt
d) -35 kt

61.4.3.0 (4392)
Given:Magnetic heading = 255°VAR = 40°WGS = 375 ktW/V = 235°(T) / 120 ktCalculate the drift angle?
a) 7° left
b) 7° right
c) 9° left
d) 16° right

61.4.3.0 (4393)
Given:True Heading = 180° TAS = 500 ktW/V 225° / 100 ktCalculate the GS?
a) 435 kt
b) 600 kt
c) 535 kt
d) 450 kt

61.4.3.0 (4394)
Given:True heading = 310° TAS = 200 ktGS = 176 ktDrift angle 7° right.Calculate the W/V?
a) 270° / 33 kt
b) 360° / 33 kt

c) 090° / 33 kt
d) 180° / 33 kt

61.4.3.0 (4395)
Given:True Heading = 090° TAS = 180 ktGS = 180 ktDrift 5° rightCalculate the W/V?
a) 360° / 15 kt
b) 190° / 15 kt
c) 010° / 15 kt
d) 180° / 15 kt

61.4.3.0 (4396)
Given:True Heading = 090°TAS = 200 ktW/V = 220° / 30 kt.Calculate the GS?
a) 220 kt
b) 230 kt
c) 180 kt
d) 200 kt

61.4.3.0 (4397)
Given: M 0.80, OAT -50°C, FL 330, GS 490 kt, VAR 20°W, Magnetic heading 140°, Drift is 11° Right. Calculate the true W/V?
a) 020°/95 kt
b) 025°/47 kt
c) 200°/95 kt
d) 025°/45 kt

61.4.3.0 (4398)
Given: Compass Heading 090°, Deviation 2°W, Variation 12°E, TAS 160 kt.Whilst maintaining a radial 070° from a VOR station, the aircraft flies a ground distance of 14 NM in 6 MIN. What is the W/V °(T)?
a) 160°/50 kt
b) 340°/25 kt
c) 340°/98 kt
d) 155°/25 kt

61.4.3.0 (4399)
An aeroplane is flying at TAS 180 kt on a track of 090°. The W/V is 045° / 50kt.How far can the aeroplane fly out from its base and return in one hour?
a) 85 NM
b) 88 NM
c) 56 NM
d) 176 NM

61.4.3.0 (4400)
The following information is displayed on an Inertial Navigation System:GS 520 kt,True HDG 090°,Drift angle 5° right,TAS 480 kt.SAT (static air temperature) -51°C.The W/V being experienced is:
a) 320° / 60 kt
b) 225° / 60 kt
c) 220° / 60 kt
d) 325° / 60 kt

61.4.3.0 (4401)
The reported surface wind from the Control Tower is 240°/35 kt. Runway 30 (300°). What is the cross-wind component?
a) 30 kt
b) 24 kt
c) 27 kt
d) 21 kt

61.4.3.0 (4402)
Given:TAS = 132 kt,True HDG = 257°W/V = 095°(T)/35kt.Calculate the drift angle and GS?
a) 4°R - 165 kt
b) 2°R - 166 kt
c) 4°L - 167 kt
d) 3°L - 166 kt

61.4.3.0 (4403)
Given:TAS = 270 kt,True HDG = 270°,Actual wind 205°(T)/30kt,Calculate the drift angle and GS?
a) 6R - 259kt
b) 6L - 256kt
c) 6R - 251kt
d) 8R - 259kt

61.4.3.0 (4404)
Given:TAS = 270 kt,True HDG = 145°,Actual wind = 205°(T)/30kt.Calculate the drift angle and GS?
a) 6°L - 256 kt
b) 6°R - 251 kt
c) 8°R - 261 kt
d) 6°R - 259 kt

61.4.3.0 (4405)
Given:TAS = 470 kt,True HDG = 317°W/V = 045°(T)/45ktCalculate the drift angle and GS?
a) 5°L - 470 kt
b) 3°R - 470 kt
c) 5°L - 475 kt
d) 5°R - 475 kt

61.4.3.0 (4406)
Given:TAS = 140 kt,True HDG = 302°,W/V = 045°(T)/45ktCalculate the drift angle and GS?
a) 16°L - 156 kt
b) 9°R - 143 kt
c) 9°L - 146 kt
d) 18°R - 146 kt

61.4.3.0 (4407)
Given:TAS = 290 kt,True HDG = 171°,W/V = 310°(T)/30ktCalculate the drift angle and GS?

a) 4°L - 314 kt
b) 4°R - 310 kt
c) 4°R - 314 kt
d) 4°L - 310 kt

61.4.3.0 (4408)
Given:TAS = 485 kt,True HDG = 226°,W/V = 110°(T)/95kt.Calculate the drift angle and GS?
a) 9°R - 533 kt
b) 7°R - 531 kt
c) 9°R - 433 kt
d) 8°L - 435 kt

61.4.3.0 (4409)
Given:TAS = 235 kt,HDG (T) = 076°W/V = 040/40kt.Calculate the drift angle and GS?
a) 7R - 204 kt
b) 7L - 269 kt
c) 5L - 255 kt
d) 5R - 207 kt

61.4.3.0 (4410)
Given: TAS = 440 kt,HDG (T) = 349°W/V = 040/40kt.Calculate the drift and GS?
a) 4L - 415 kt
b) 2L - 420 kt
c) 6L - 395 kt
d) 5L - 385 kt

61.4.3.0 (4411)
Given: TAS = 465 kt,HDG (T) = 124°,W/V = 170/80kt.Calculate the drift and GS?
a) 8L - 415 kt
b) 3L - 415 kt
c) 4L - 400 kt
d) 6L - 400 kt

61.4.3.0 (4412)
Given: TAS = 95 kt,HDG (T) = 075°,W/V = 310/20kt.Calculate the drift and GS?
a) 9R - 108 kt
b) 10L - 104 kt
c) 9L - 105 kt
d) 8R - 104 kt

61.4.3.0 (4413)
Given: TAS = 140 kt,HDG (T) = 005°,W/V = 265/25kt.Calculate the drift and GS?
a) 10R - 146 kt
b) 9R - 140 kt
c) 11R - 142 kt
d) 11R - 140 kt

61.4.3.0 (4414)
Given: TAS = 190 kt,HDG (T) = 355°,W/V = 165/25kt.Calculate the drift and GS?
a) 1L - 215 kt
b) 1L - 225 kt
c) 1R - 175 kt
d) 1R - 165 kt

61.4.3.0 (4415)
Given: TAS = 230 kt,HDG (T) = 250°,W/V = 205/10kt.Calculate the drift and GS?
a) 2R - 223 kt
b) 2L - 224 kt
c) 1L - 225 kt
d) 1R - 221 kt

61.4.3.0 (4416)
Given: TAS = 205 kt,HDG (T) = 180°,W/V = 240/25kt.Calculate the drift and GS?
a) 6L - 194 kt
b) 7L - 192 kt
c) 3L - 190 kt
d) 4L - 195 kt

61.4.3.0 (4417)
Given: TAS = 250 kt,HDG (T) = 029°,W/V = 035/45kt.Calculate the drift and GS?
a) 1L - 205 kt
b) 1R - 205 kt
c) 1L - 265 kt
d) 1R - 295 kt

61.4.3.0 (4418)
Given: TAS = 132 kt,HDG (T) = 053°,W/V = 205/15kt.Calculate the Track (°T) and GS?
a) 050 - 145 kt
b) 057 - 144 kt
c) 052 - 143 kt
d) 051 - 144 kt

61.4.3.0 (4419)
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?
a) 22 kt
b) 26 kt
c) 15 kt
d) 20 kt

61.4.3.0 (4420)
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 windspeed that can be accepted without exceeding the tailwind limit?
a) 11 kt
b) 18 kt

c) 8 kt
d) 15 kt

61.4.3.0 (4421)
Given: Maximum allowable crosswind component is 20 kt. Runway 06, RWY QDM 063°(M). Wind direction 100°(M)Calculate the maximum allowable windspeed?
a) 33 kt
b) 31 kt
c) 26 kt
d) 25 kt

61.4.3.0 (4422)
Given:TAS = 472 kt,True HDG = 005°,W/V = 110°(T)/50kt.Calculate the drift angle and GS?
a) 6°L - 487 kt
b) 7°R - 491 kt
c) 7°L - 491 kt
d) 7°R - 487 kt

61.4.3.0 (4423)
Given:TAS = 190 kt,True HDG = 085°,W/V = 110°(T)/50kt.Calculate the drift angle and GS?
a) 8°L - 146 kt
b) 7°L - 156 kt
c) 4°L - 168 kt
d) 4°L - 145 kt

61.4.3.0 (4424)
Given: TAS = 220 kt,Magnetic course = 212 º, W/V 160 º(M)/ 50kt,Calculate the GS?
a) 186 kt
b) 290 kt
c) 246 kt
d) 250 kt

61.4.3.0 (4425)
Given: Magnetic track = 315 º, HDG = 301 º(M),VAR = 5ºW,TAS = 225 kt, The aircraft flies 50 NM in 12 MIN.Calculate the W/V(°T)?
a) 190 º/63 kt
b) 355 º/15 kt
c) 195 º/61 kt
d) 195 º/63 kt

61.4.3.0 (4426)
Given:TAS = 370 kt,True HDG = 181°,W/V = 095°(T)/35kt.Calculate the true track and GS?
a) 186 - 370 kt
b) 176 - 370 kt
c) 192 - 370 kt
d) 189 - 370 kt

61.4.3.0 (4427)
Given:TAS = 375 kt,True HDG = 124°,W/V = 130°(T)/55kt.Calculate the true track and GS?
a) 123 - 320 kt
b) 125 - 322 kt
c) 126 - 320 kt
d) 125 - 318 kt

61.4.3.0 (4428)
Given:TAS = 125 kt,True HDG = 355°,W/V = 320°(T)/30kt.Calculate the true track and GS?
a) 005 - 102 kt
b) 345 - 100 kt
c) 348 - 102 kt
d) 002 - 98 kt

61.4.3.0 (4429)
Given: TAS = 198 kt,HDG (°T) = 180,W/V = 359/25.Calculate the Track(°T) and GS?
a) 180 - 223 kt
b) 179 - 220 kt
c) 181 - 180 kt
d) 180 - 183 kt

61.4.3.0 (4430)
Given: TAS = 135 kt,HDG (°T) = 278,W/V = 140/20ktCalculate the Track (°T) and GS?
a) 283 - 150 kt
b) 279 - 152 kt
c) 282 - 148 kt
d) 275 - 150 kt

61.4.3.0 (4431)
Given: TAS = 225 kt,HDG (°T) = 123°,W/V = 090/60kt.Calculate the Track (°T) and GS?
a) 134 - 178 kt
b) 134 - 188 kt
c) 120 - 190 kt
d) 128 - 180 kt

61.4.3.0 (4432)
Given: TAS = 480 kt,HDG (°T) = 040°,W/V = 090/60kt.Calculate the Track (°T) and GS?
a) 034 - 445 kt
b) 028 - 415 kt
c) 032 - 425 kt
d) 036 - 435 kt

61.4.3.0 (4433)
Given: TAS = 155 kt,HDG (T) = 216°,W/V = 090/60kt.Caslculate the Track (°T) and GS?

<u>a) 231 - 196 kt</u>
b) 224 - 175 kt
c) 222 - 181 kt
d) 226 - 186 kt

61.4.3.0 (4434)
Given: TAS = 170 kt,HDG(T) = 100°,W/V = 350/30kt.Calculate the Track (°T) and GS?
<u>a) 109 - 182 kt</u>
b) 091 - 183 kt
c) 103 - 178 kt
d) 098 - 178 kt

61.4.3.0 (4435)
Given: TAS = 90 kt,HDG (T) = 355°,W/V = 120/20kt.Calculate the Track (°T) and GS?
<u>a) 346 - 102 kt</u>
b) 006 - 95 kt
c) 358 - 101 kt
d) 359 - 102 kt

61.4.3.0 (4436)
Given: TAS = 485 kt,HDG (T) = 168°,W/V = 130/75kt.Calculate the Track (°T) and GS?
<u>a) 174 - 428 kt</u>
b) 173 - 424 kt
c) 175 - 420 kt
d) 175 - 432 kt

61.4.3.0 (4437)
Given: TAS = 155 kt,Track (T) = 305°,W/V = 160/18kt.Calculate the HDG (°T) and GS?
<u>a) 301 - 169 kt</u>
b) 305 - 169 kt
c) 309 - 170 kt
d) 309 - 141 kt

61.4.3.0 (4438)
Given: TAS = 130 kt,Track (T) = 003°,W/V = 190/40kt.Calculate the HDG (°T) and GS?
<u>a) 001 - 170 kt</u>
b) 002 - 173 kt
c) 359 - 166 kt
d) 357 - 168 kt

61.4.3.0 (4439)
Given: TAS = 227 kt,Track (T) = 316°, W/V = 205/15kt.Calculate the HDG (°T) and GS?
<u>a) 312 - 232 kt</u>
b) 311 - 230 kt
c) 313 - 235 kt
d) 310 - 233 kt

61.4.3.0 (4440)
Given: TAS = 465 kt,Track (T) = 007°,W/V = 300/80kt.Calculate the HDG (°T) and GS?
<u>a) 358 - 428 kt</u>
b) 001 - 432 kt
c) 000 - 430 kt
d) 357 - 430 kt

61.4.3.0 (4441)
Given: TAS = 200 kt,Track (T) = 073°,W/V = 210/20kt.Calculate the HDG (°T) and GS?
<u>a) 077 - 214 kt</u>
b) 079 - 211 kt
c) 075 - 213 kt
d) 077 - 210 kt

61.4.3.0 (4442)
Given: TAS = 200 kt,Track (T) = 110°,W/V = 015/40kt.Calculate the HDG (°T) and GS?
<u>a) 099 - 199 kt</u>
b) 121 - 207 kt
c) 121 - 199 kt
d) 097 - 201 kt

61.4.3.0 (4443)
Given: TAS = 270 kt,Track (T) = 260°,W/V = 275/30kt.Calculate the HDG (°T) and GS?
<u>a) 262 - 241 kt</u>
b) 262 - 237 kt
c) 264 - 241 kt
d) 264 - 237 kt

61.4.3.0 (4444)
Given: True HDG = 307°,TAS = 230 kt,Track (T) = 313°,GS = 210 kt.Calculate the W/V?
<u>a) 260/30kt</u>
b) 257/35kt
c) 255/25kt
d) 265/30kt

61.4.3.0 (4445)
Given:True HDG = 233°,TAS = 480 kt,Track (T) = 240°,GS = 523 kt.Calculate the W/V?
<u>a) 110/75kt</u>
b) 115/70kt
c) 110/80kt
d) 105/75kt

61.4.3.0 (4446)
Given: True HDG = 133°,TAS = 225 kt,Track (T) = 144°,GS = 206 kt.Calculate the W/V?
a) 075/45kt
b) 070/40kt
c) 070/45kt
d) 075/50kt

61.4.3.0 (4447)
Given: True HDG = 074°,TAS = 230 kt,Track (T) = 066°,GS = 242 kt.Calculate the W/V?
a) 180/35kt
b) 180/30kt
c) 185/35kt
d) 180/40kt

61.4.3.0 (4448)
Given: True HDG = 206°,TAS = 140 kt,Track (T) = 207°,GS = 135 kt.Calculate the W/V?
a) 180/05kt
b) 000/05kt
c) 000/10kt
d) 180/10kt

61.4.3.0 (4449)
Given:True HDG = 054°,TAS = 450 kt,Track (T) = 059°,GS = 416 kt.Calculate the W/V?
a) 010/50kt
b) 005/50kt
c) 010/55kt
d) 010/45kt

61.4.3.0 (4450)
Given: True HDG = 145°,TAS = 240 kt,Track (T) = 150°,GS = 210 kt.Calculate the W/V?
a) 115/35kt
b) 360/35kt
c) 180/35kt
d) 295/35kt

61.4.3.0 (4451)
Given:True HDG = 002°,TAS = 130 kt,Track (T) = 353°,GS = 132 kt.Calculate the W/V?
a) 095/20kt
b) 090/15kt
c) 090/20kt
d) 095/25kt

61.4.3.0 (4452)
Given: True HDG = 035°,TAS = 245 kt,Track (T) = 046°,GS = 220 kt.Calculate the W/V?
a) 340/50kt
b) 335/45kt
c) 335/55kt
d) 340/45kt

61.4.3.0 (4453)
Given: course required = 085° (T),Forecast W/V 030/100kt,TAS = 470 kt,Distance = 265 NM.Calculate the true HDG and flight time?
a) 075°, 39 MIN
b) 076°, 34 MIN
c) 096°, 29 MIN
d) 095°, 31 MIN

61.4.3.0 (4454)
Given:Runway direction 083°(M),Surface W/V 035/35kt.Calculate the effective headwind component?
a) 24 kt
b) 27 kt
c) 31 kt
d) 34 kt

61.4.3.0 (4455)
Given:For take-off an aircraft requires a headwind component of at least 10 kt and has a cross-wind limitation of 35 kt. The angle between the wind direction and the runway is 60°, Calculate the minimum and maximum allowable wind speeds?
a) 20 kt and 40 kt
b) 12 kt and 38 kt
c) 15 kt and 43 kt
d) 18 kt and 50 kt

61.4.3.0 (4456)
Given: Runway direction 230°(T), Surface W/V 280°(T)/40 kt. Calculate the effective cross-wind component?
a) 31 kt
b) 36 kt
c) 21 kt
d) 26 kt

61.4.3.0 (4457)
Given:Runway direction 210°(M),Surface W/V 230°(M)/30kt. Calculate the cross-wind component?
a) 10 kt
b) 19 kt
c) 16 kt
d) 13 kt

61.4.3.0 (4458)
Given:Runway direction 305°(M),Surface W/V 260°(M)/30 kt. Calculate the cross-wind component?
a) 21 kt
b) 24 kt

c) 27 kt
d) 18 kt

61.4.3.0 (4459)
Given:Magnetic track = 075°,HDG = 066°(M),VAR = 11°E,TAS = 275 ktAircraft flies 48 NM in 10 MIN.Calculate the true W/V °?
a) 340°/45 kt
b) 320°/50 kt
c) 210°/15 kt
d) 180°/45 kt

61.4.3.0 (4460)
Given: Magnetic track = 210°,Magnetic HDG = 215°,VAR = 15°E,TAS = 360 kt,Aircraft flies 64 NM in 12 MIN.Calculate the true W/V?
a) 265°/50 kt
b) 195°/50 kt
c) 235°/50 kt
d) 300°/30 kt

61.4.3.0 (4461)
Given:An aircraft is on final approach to runway 32R (322°),The wind velocity reported by the tower is 350°/20 kt.,TAS on approach is 95 kt. In order to maintain the centre line, the aircraft's heading (°M) should be :
a) 328°
b) 322°
c) 316°
d) 326°

61.4.3.0 (4462)
Given:FL120, OAT is ISA standard, CAS is 200 kt,Track is 222°(M),Heading is 215°(M),Variation is 15°W.Time to fly 105 NM is 21 MIN.What is the W/V?
a) 050°(T) / 70 kt.
b) 040°(T) / 105 kt.
c) 055°(T) / 105 kt .
d) 065°(T) / 70 kt.

61.4.4.0 (4463)
A useful method of a pilot resolving, during a visual flight, any uncertainty in the aircraft's position is to maintain visual contact with the ground and:
a) set heading towards a line feature such as a coastline, motorway, river or railway
b) fly the reverse of the heading being flown prior to becoming uncertain until a pinpoint is obtained
c) fly expanding circles until a pinpoint is obtained
d) fly reverse headings and associated timings until the point of departure is regained

61.4.5.0 (4464)
An aircraft is maintaining a 5.2% gradient is at 7 NM from the runway, on a flat terrain, its height is approximately:
a) 2210 FT
b) 680 FT
c) 1890 FT
d) 3640 FT

61.4.5.0 (4465)
Given:FL 350,Mach 0.80,OAT -55°C. Calculate the values for TAS and local speed of sound (LSS)?
a) 461 kt , LSS 576 kt
b) 237 kt, LSS 296 kt
c) 490 kt, LSS 461 kt
d) 461 kt , LSS 296 kt

61.4.5.0 (4466)
Given: Pressure Altitude 29000 FT, OAT -55°C. Calculate the Density Altitude?
a) 27500 FT
b) 31000 FT
c) 33500 FT
d) 26000 FT

61.4.5.0 (4467)
Given:TAS = 485 kt,OAT = ISA +10°C,FL 410.Calculate the Mach Number?
a) 0.825
b) 0.90
c) 0.85
d) 0.87

61.4.5.0 (4468)
What is the ISA temperature value at FL 330?
a) -50°C
b) -56°C
c) -66°C
d) -81°C

61.4.5.0 (4469)
Given: TAS 487kt, FL 330, Temperature ISA + 15. Calculate the MACH Number?
a) 0.81
b) 0.84
c) 0.76
d) 0.78

61.4.5.0 (4470)
Given: FL250, OAT -15 ºC, TAS 250 kt.Calculate the Mach No.?
a) 0.40
b) 0.42
c) 0.44
d) 0.39

61.4.5.0 (4471)
Given:Airport elevation is 1000 ft. QNH is 988 hPa.What is the approximate airport pressure altitude?(Assume 1 hPa = 27 FT)
a) 1680 FT

b) 320 FT
c) 680 FT
d) - 320 FT

61.4.5.0 (4472)
Given :True altitude 9000 FT,OAT -32°C,CAS 200 kt.What is the TAS?
a) 220 kt
b) 215 kt
c) 200 kt
d) 210 kt

61.4.5.0 (4473)
Given:Aircraft at FL 150 overhead an airportElevation of airport 720 FT.QNH is 1003 hPa.OAT at FL150 -5°C.What is the true altitude of the aircraft?(Assume 1 hPa = 27 FT)
a) 15 280 FT
b) 15 840 FT
c) 14 160 FT
d) 14 720 FT

61.4.5.0 (4474)
An aircraft takes off from the aerodrome of BRIOUDE (altitude 1 483 FT, QFE = 963 hPa, temperature = 32°C).Five minutes later, passing 5 000 FT on QFE, the second altimeter set on 1 013 hPa will indicate approximately :
a) 6 400 FT
b) 6 800 FT
c) 6 000 FT
d) 4 000 FT

61.4.6.0 (4475)
(For this question use annex 061-1818A)Assume a North polar stereographic chart whose grid is aligned with the Greenwich meridian.An aircraft flies from the geographic North pole for a distance of 480 NM along the 110°E meridian, then follows a grid track of 154° for a distance of 300 NM.Its position is now approximately:
a) 80°00'N 080°E
b) 78°45'N 087°E
c) 79°15'N 074°E
d) 70°15'N 080°E

61.4.6.0 (4476)
Given:A polar stereographic chart whose grid is aligned with the zero meridian. Grid track 344°, Longitude 115°00'W,Calculate the true course?
a) 229°
b) 099°
c) 279°
d) 049°

61.4.6.0 (4477)
(For this question use annex 061-1828A and the data for 1215 UTC)1215 UTC LAJES VORTAC (38°46'N 027°05'W) RMI reads 178°, range 135 NM.Calculate the aircraft position at 1215 UTC?
a) 40°55'N 027°55'W
b) 40°50'N 027°40'W
c) 41°00'N 028°10'W
d) 41°05'N 027°50'W

61.4.6.0 (4478)
(For this question use annex 061-1829A and the data for 1300 UTC)1300 UTC DR position 37°30'N 021°30'W alter heading PORT SANTO NDB (33°03'N 016°23'W) TAS 450 kt,Forecast W/V 360°/30kt.Calculate the ETA at PORT SANTO NDB?
a) 1348
b) 1344
c) 1341
d) 1354

61.4.7.0 (4479)
For a distance of 1860 NM between Q and R, a ground speed ""out"" of 385 kt, a ground speed ""back"" of 465 kt and an endurance of 8 HR (excluding reserves) the distance from Q to the point of safe return (PSR) is:
a) 1685 NM
b) 1532 NM
c) 930 NM
d) 1865 NM

61.4.7.0 (4480)
Two points A and B are 1000 NM apart. TAS = 490 kt.On the flight between A and B the equivalent headwind is -20 kt.On the return leg between B and A, the equivalent headwind is +40 kt.What distance from A, along the route A to B, is the the Point of Equal Time (PET)?
a) 530 NM
b) 470 NM
c) 455 NM
d) 500 NM

61.4.7.0 (4481)
Given:AD = Air distance GD = Ground distanceTAS = True AirspeedGS = GroundspeedWhich of the following is the correct formula to calculate ground distance (GD) gone?
a) GD = (AD X GS)/TAS
b) GD = (AD - TAS)/TAS
c) GD = AD X (GS -TAS)/GS
d) GD = TAS/(GS X AD)

61.4.7.0 (4482)
An aircraft was over 'A' at 1435 hours flying direct to 'B'.Given:Distance 'A' to 'B' 2900 NMTrue airspeed 470 ktMean wind component 'out' +55 ktMean wind component 'back' -75 ktThe ETA for reaching the Point of Equal Time (PET) between 'A' and 'B' is:
a) 1657
b) 1744

c) 1846
d) 1721

61.4.7.0 (4483)
An aircraft was over 'A' at 1435 hours flying direct to 'B'.Given:Distance 'A' to 'B' 2900 NMTrue airspeed 470 ktMean wind component 'out' +55 ktMean wind component 'back' -75 ktSafe endurance 9 HR 30 MIN The distance from 'A' to the Point of Safe Return (PSR) 'A' is:
a) 2141 NM
b) 1611 NM
c) 1759 NM
d) 2844 NM

61.4.7.0 (4484)
Given:Distance 'A' to 'B' 2484 NMGroundspeed 'out' 420 ktGroundspeed 'back' 500 ktThe time from 'A' to the Point of Equal Time (PET) between 'A' and 'B' is:
a) 193 MIN
b) 163 MIN
c) 173 MIN
d) 183 MIN

61.4.7.0 (4485)
Given:Distance 'A' to 'B' 2484 NMMean groundspeed 'out' 420 ktMean groundspeed 'back' 500 ktSafe endurance 08 HR 30 MIN The distance from 'A' to the Point of Safe Return (PSR) 'A' is:
a) 1940 NM
b) 1908 NM
c) 1736 NM
d) 1630 NM

61.4.7.0 (4486)
An aircraft was over 'Q' at 1320 hours flying direct to 'R'.Given:Distance 'Q' to 'R' 3016 NMTrue airspeed 480 ktMean wind component 'out' -90 ktMean wind component 'back' +75 ktThe ETA for reaching the Point of Equal Time (PET) between 'Q' and 'R' is:
a) 1752
b) 1756
c) 1820
d) 1742

61.4.7.0 (4487)
An aircraft was over 'Q' at 1320 hours flying direct to 'R'.Given:Distance 'Q' to 'R' 3016 NMTrue airspeed 480 ktMean wind component 'out' -90 ktMean wind component 'back' +75 ktSafe endurance 10:00 HR The distance from 'Q' to the Point of Safe Return (PSR) 'Q' is:
a) 2290 NM
b) 2370 NM
c) 1310 NM
d) 1510 NM

61.4.7.0 (4488)
Given:Distance 'A' to 'B' 1973 NMGroundspeed 'out' 430 ktGroundspeed 'back' 385 ktThe time from 'A' to the Point of Equal Time (PET) between 'A' and 'B' is:
a) 130 MIN
b) 145 MIN
c) 162 MIN
d) 181 MIN

61.4.7.0 (4489)
Given:Distance 'A' to 'B' 1973 NMGroundspeed 'out' 430 ktGroundspeed 'back' 385 ktSafe endurance 7 HR 20 MIN The distance from 'A' to the Point of Safe Return (PSR) 'A' is:
a) 1490 NM
b) 1664 NM
c) 1698 NM
d) 1422 NM

61.4.7.0 (4490)
Given:Distance 'A' to 'B' 2346 NMGroundspeed 'out' 365 ktGroundspeed 'back' 480 ktThe time from 'A' to the Point of Equal Time (PET) between 'A' and 'B' is:
a) 219 MIN
b) 290 MIN
c) 197 MIN
d) 167 MIN

61.4.7.0 (4491)
Given:Distance 'A' to 'B' 2346 NMGroundspeed 'out' 365 ktGroundspeed 'back' 480 ktSafe endurance 8 HR 30 MIN The time from 'A' to the Point of Safe Return (PSR) 'A' is:
a) 290 MIN
b) 219 MIN
c) 197 MIN
d) 209 MIN

61.4.7.0 (4492)
Given:Distance 'Q' to 'R' 1760 NMGroundspeed 'out' 435 ktGroundspeed 'back' 385 ktThe time from 'Q' to the Point of Equal Time (PET) between 'Q' and 'R' is:
a) 114 MIN
b) 110 MIN
c) 106 MIN
d) 102 MIN

61.4.7.0 (4493)
Given:Distance 'Q' to 'R' 1760 NMGroundspeed 'out' 435 ktGroundspeed 'back' 385 ktSafe endurance 9 HR The distance from 'Q' to the Point of Safe Return (PSR) between 'Q' and 'R' is:
a) 1838 NM
b) 1313 NM
c) 1467 NM
d) 1642 NM

61.4.7.0 (4494)
Given:Distance 'A' to 'B' 3623 NMGroundspeed 'out' 370 ktGroundspeed 'back' 300 ktThe time from 'A' to the Point of Equal Time (PET) between 'A' and 'B' is:
a) 263 MIN
b) 288 MIN
c) 323 MIN
d) 238 MIN

61.4.7.0 (4495)
An aircraft takes-off from an airport 2 hours before sunset. The pilot flies a track of 090°(T), W/V 130°/ 20 kt, TAS 100 kt. In order to return to the point of departure before sunset, the furthest distance which may be travelled is:
a) 97 NM
b) 115 NM
c) 105 NM
d) 84 NM

61.4.7.0 (4496)
From the departure point, the distance to the point of equal time is :
a) inversely proportional to the sum of ground speed out and ground speed back
b) proportional to the sum of ground speed out and ground speed back
c) inversely proportional to the total distance to go
d) inversely proportional to ground speed back

61.4.7.0 (4497)
Given:Distance A to B is 360 NM. Wind component A - B is -15 kt,Wind component B - A is +15 kt,TAS is 180 kt.What is the distance from the equal-time-point to B?
a) 165 NM
b) 195 NM
c) 180 NM
d) 170 NM

61.5.1.0 (4498)
A ground feature appears 30° to the left of the centre line of the CRT of an airborne weather radar. If the heading of the aircraft is 355° (M) and the magnetic variation is 15° East, the true bearing of the aircraft from the feature is:
a) 160°
b) 220°
c) 310°
d) 130°

61.5.1.0 (4499)
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:
a) groundspeed
b) position
c) track
d) drift

61.5.1.0 (4500)
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?
a) 054°
b) 318°
c) 234°
d) 038°

61.5.1.0 (4501)
A ground feature was observed on a relative bearing of 325° and five minutes later on a relative bearing of 280°. The aircraft heading was 165°(M), variation 25°W, drift 10°Right and GS 360 kt. When the relative bearing was 280°, the distance and true bearing of the aircraft from the feature was:
a) 30 NM and 240°
b) 40 NM and 110°
c) 40 NM and 290°
d) 30 NM and 060°

61.5.1.0 (4502)
An island is observed by weather radar to be 15° to the left. The aircraft heading is 120°(M) and the magnetic variation 17°W. What is the true bearing of the aircraft from the island?
a) 268°
b) 302°
c) 088°
d) 122°

61.5.1.0 (4503)
A ground feature was observed on a relative bearing of 315° and 3 MIN later on a relative bearing of 270°. The W/V is calm, aircraft GS 180 kt.What is the minimum distance between the aircraft and the ground feature?
a) 9 NM
b) 12 NM
c) 3 NM
d) 6 NM

61.5.1.0 (4504)
An island is observed to be 15° to the left.The aircraft heading is 120°(M), variation 17°(W).The bearing °(T) from the aircraft to the island is:
a) 88
b) 122
c) 268
d) 302

61.5.1.0 (4505)
An island appears 60° 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 (MH) of 276° with the magnetic variation (VAR) 10°E?
a) 046°
b) 086°

c) 226°
d) 026°

61.5.1.0 (4506)
An island appears 45° to the right 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 (MH) of 215° with the magnetic variation (VAR) 21°W?
a) 059°
b) 101°
c) 239°
d) 329°

61.5.1.0 (4507)
An island appears 30° to the right 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 (MH) of 355° with the magnetic variation (VAR) 15°E?
a) 220°
b) 130°
c) 160°
d) 190°

61.5.1.0 (4508)
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 (MH) of 020° with the magnetic variation (VAR) 25°W?
a) 145°
b) 195°
c) 205°
d) 325°

61.5.2.0 (4509)
An aircraft is descending down a 12% slope whilst maintaining a GS of 540 kt.The rate of descent of the aircraft is approximately:
a) 6500 FT/MIN
b) 650 FT/MIN
c) 4500 FT/MIN
d) 3900 FT/MIN

61.5.2.0 (4510)
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?
a) 26.7 NM
b) 19.2 NM
c) 38.4 NM
d) 16.0 NM

61.5.2.0 (4511)
An aircraft at FL370 is required to commence descent at 120 NM from a VOR and to cross the facility at FL130. If the mean GS for the descent is 288 kt, the minimum rate of descent required is:
a) 960 FT/MIN
b) 860 FT/MIN
c) 890 FT/MIN
d) 920 FT/MIN

61.5.2.0 (4512)
An aircraft at FL350 is required to descend to cross a DME facility at FL80. Maximum rate of descent is 1800 FT/MIN and mean GS for descent is 276 kt. The minimum range from the DME at which descent should start is:
a) 69 NM
b) 79 NM
c) 49 NM
d) 59 NM

61.5.2.0 (4513)
An aircraft at FL350 is required to cross a VOR/DME facility at FL110 and to commence descent when 100 NM from the facility. If the mean GS for the descent is 335 kt, the minimum rate of descent required is:
a) 1340 FT/MIN
b) 1390 FT/MIN
c) 1240 FT/MIN
d) 1290 FT/MIN

61.5.2.0 (4514)
An aircraft at FL390 is required to descend to cross a DME facility at FL70. Maximum rate of descent is 2500 FT/MIN, mean GS during descent is 248 kt. What is the minimum range from the DME at which descent should commence?
a) 53 NM
b) 58 NM
c) 63 NM
d) 68 NM

61.5.2.0 (4515)
An aircraft at FL370 is required to commence descent when 100 NM from a DME facility and to cross the station at FL120. If the mean GS during the descent is 396 kt, the minimum rate of descent required is approximately:
a) 1650 FT/MIN
b) 2400 FT/MIN
c) 1000 FT/MIN
d) 1550 FT/MIN

61.5.2.0 (4516)
At 0422 an aircraft at FL370, GS 320kt, is on the direct track to VOR 'X' 185 NM distant. The aircraft is required to cross VOR 'X' at FL80. For a mean rate of descent of 1800 FT/MIN at a mean GS of 232 kt, the latest time at which to commence descent is:
a) 445
b) 448

c) 451
d) 454

61.5.2.0 (4517)
An aircraft at FL330 is rerquired to commence descent when 65 NM from a VOR and to cross the VOR at FL100. The mean GS during the descent is 330 kt. What is the minimum rate of descent required?
a) 1950 FT/MIN
b) 1650 FT/MIN
c) 1750 FT/MIN
d) 1850 FT/MIN

61.5.2.0 (4518)
An aircraft at FL290 is required to commence descent when 50 NM from a VOR and to cross that VOR at FL80. Mean GS during descent is 271kt. What is the minimum rate of descent required?
a) 1900 FT/MIN
b) 2000 FT/MIN
c) 1700 FT/MIN
d) 1800 FT/MIN

61.5.2.0 (4519)
An aircraft at FL350 is required to commence descent when 85 NM from a VOR and to cross the VOR at FL80. The mean GS for the descent is 340 kt. What is the minimum rate of descent required?
a) 1800 FT/MIN
b) 1900 FT/MIN
c) 1600 FT/MIN
d) 1700 FT/MIN

61.5.2.0 (4520)
What is the effect on the Mach number and TAS in an aircraft that is climbing with constant CAS?
a) Mach number increases, TAS increases
b) Mach number remains constant, TAS increases
c) Mach number decreases, TAS decreases
d) Mach number increases, TAS remains constant

61.5.2.0 (4521)
Given:TAS = 197 kt, True course = 240°,W/V = 180/30kt. Descent is initiated at FL 220 and completed at FL 40. Distance to be covered during descent is 39 NM.What is the approximate rate of descent?
a) 1400 FT/MIN
b) 800 FT/MIN
c) 950 FT/MIN
d) 1500 FT/MIN

61.5.2.0 (4522)
Given:ILS GP angle = 3.5 DEG,GS = 150 kt.What is the approximate rate of descent?
a) 900 FT/MIN
b) 1000 FT/MIN
c) 700 FT/MIN
d) 800 FT/MIN

61.5.2.0 (4523)
Given:aircraft height 2500 FT,ILS GP angle 3°.At what approximate distance from THR can you expect to capture the GP?
a) 8.3 NM
b) 7.0 NM
c) 13.1 NM
d) 14.5 NM

61.5.3.0 (4524)
A pilot receives the following signals from a VOR DME station: radial 180°+/- 1°, distance = 200 NM. What is the approximate error?
a) +/- 3.5 NM
b) +/- 1 NM
c) +/- 2 NM
d) +/- 7 NM

61.5.3.0 (4525)
An aircraft at FL310, M0.83, temperature -30°C, is required to reduce speed in order to cross a reporting point five minutes later than planned. Assuming that a zero wind component remains unchanged, when 360 NM from the reporting point Mach Number should be reduced to:
a) M0.74
b) M0.76
c) M0.78
d) M0.80

61.5.3.0 (4526)
An aircraft at FL120, IAS 200kt, OAT -5° and wind component +30kt, is required to reduce speed in order to cross a reporting point 5 MIN later than planned. Assuming flight conditions do not change, when 100 NM from the reporting point IAS should be reduced to:
a) 159 kt
b) 165 kt
c) 169 kt
d) 174 kt

61.5.3.0 (4527)
An aircraft at FL370, M0.86, OAT -44°C, headwind component 110 kt, is required to reduce speed in order to cross a reporting point 5 MIN later than planned. If the speed reduction were to be made 420 NM from the reporting point, what Mach Number is required?
a) M0.81
b) M0.73
c) M0.75
d) M0.79

61.5.3.0 (4528)
An aircraft at FL140, IAS 210 kt, OAT -5°C and wind component minus 35 kt, is required to reduce speed in order to cross a reporting point 5 MIN later than planned. Assuming that flight conditions do not change, when 150 NM from the reporting point the IAS should be reduced by:
a) 20 kt
b) 25 kt
c) 30 kt
d) 15 kt

61.5.3.0 (4529)
An aircraft obtains a relative bearing of 315° from an NDB at 0830. At 0840 the relative bearing from the same position is 270°. Assuming no drift and a GS of 240 kt, what is the approximate range from the NDB at 0840?
a) 40 NM
b) 50 NM
c) 60 NM
d) 30 NM

61.5.3.0 (4530)
The distance between positions A and B is 180 NM. An aircraft departs position A and after having travelled 60 NM, its position is pinpointed 4 NM left of the intended track. Assuming no change in wind velocity, what alteration of heading must be made in order to arrive at position B?
a) 6° Right
b) 8° Right
c) 2° Left
d) 4° Right

61.5.3.0 (4531)
Given:Distance A to B = 120 NM,After 30 NM aircraft is 3 NM to the left of course.What heading alteration should be made in order to arrive at point 'B'?
a) 8° right
b) 6° right
c) 4° right
d) 8° left

61.5.3.0 (4532)
An aircraft is planned to fly from position 'A' to position 'B',distance 480 NM at an average GS of 240 kt. It departs 'A' at 1000 UTC.After flying 150 NM along track from 'A', the aircraft is 2 MIN behind planned time.Using the actual GS experienced, what is the revised ETA at 'B'?
a) 1206
b) 1203
c) 1153
d) 1157

61.5.3.0 (4533)
An aircraft is planned to fly from position 'A' to position 'B',distance 320 NM, at an average GS of 180 kt. It departs 'A' at 1200 UTC.After flying 70 NM along track from 'A', the aircraft is 3 MIN ahead of planned time.Using the actual GS experienced, what is the revised ETA at 'B'?
a) 1333 UTC
b) 1401 UTC
c) 1347 UTC
d) 1340 UTC

61.5.3.0 (4534)
An aircraft is planned to fly from position 'A' to position 'B',distance 250 NM at an average GS of 115 kt. It departs 'A' at 0900 UTC.After flying 75 NM along track from 'A', the aircraft is 1.5 MIN behind planned time.Using the actual GS experienced, what is the revised ETA at 'B'?
a) 1115 UTC
b) 1110 UTC
c) 1044 UTC
d) 1050 UTC

61.5.3.0 (4535)
Given: Distance 'A' to 'B' is 475 NM,Planned GS 315 kt,ATD 1000 UTC,1040 UTC - fix obtained 190 NM along track.What GS must be maintained from the fix in order to achieve planned ETA at 'B'?
a) 340 kt
b) 360 kt.
c) 300 kt
d) 320 kt.

61.5.3.0 (4536)
Given: Distance 'A' to 'B' is 325 NM,Planned GS 315 kt,ATD 1130 UTC,1205 UTC - fix obtained 165 NM along track.What GS must be maintained from the fix in order to achieve planned ETA at 'B'?
a) 355 kt
b) 375 kt
c) 395 kt
d) 335 kt

61.5.3.0 (4537)
Given: Distance 'A' to 'B' is 100 NM,Fix obtained 40 NM along and 6 NM to the left of course.What heading alteration must be made to reach 'B'?
a) 15° Right
b) 9° Right
c) 6° Right
d) 18° Right

61.5.3.0 (4538)
Given: Distance 'A' to 'B' is 90 NM,Fix obtained 60 NM along and 4 NM to the right of course.What heading alteration must be made to reach 'B'?
a) 12° Left
b) 16° Left
c) 4° Left
d) 8° Left

61.5.3.0 (4539)
Given :ETA to cross a meridian is 2100 UTCGS is 441 kt TAS is 491 kt At 2010 UTC, ATC requests a speed reduction to cross the meridian at 2105 UTC.The reduction to TAS will be approximately:
a) 40 kt
b) 90 kt
c) 75 kt
d) 60 kt

61.5.3.0 (4540)
The distance between two waypoints is 200 NM,To calculate compass heading, the pilot used 2°E magnetic variation instead of 2°W.Assuming that the forecast W/V applied, what will the off track distance be at the second waypoint?
a) 14 NM
b) 7 NM
c) 0 NM
d) 21 NM

61.5.3.0 (4541)
Given:Half way between two reporting points the navigation log gives the following information:TAS 360 kt, W/V 330°/80kt, Compass heading 237°, Deviation on this heading -5°, Variation 19°W.What is the average ground speed for this leg?
a) 403 kt
b) 354 kt
c) 373 kt
d) 360 kt

61.5.4.0 (4542)
(For this question use annex 061-9437A) Complete line 1 of the 'FLIGHT NAVIGATION LOG', positions 'A' to 'B'.What is the HDG°(M) and ETA?
a) 268° - 1114 UTC
b) 282° - 1128 UTC
c) 282° - 1114 UTC
d) 268° - 1128 UTC

61.5.4.0 (4543)
(For this question use annex 061-9438A)Complete line 2 of the 'FLIGHT NAVIGATION LOG', positions 'C' to 'D'.What is the HDG°(M) and ETA?
a) HDG 193° - ETA 1239 UTC
b) HDG 188° - ETA 1229 UTC
c) HDG 193° - ETA 1249 UTC
d) HDG 183° - ETA 1159 UTC

61.5.4.0 (4544)
(For this question use annex 061-9439A)Complete line 3 of the 'FLIGHT NAVIGATION LOG', positions 'E' to 'F'.What is the HDG°(M) and ETA?
a) HDG 105° - ETA 1205 UTC
b) HDG 095° - ETA 1155 UTC
c) HDG 106° - ETA 1215 UTC
d) HDG 115° - ETA 1145 UTC

61.5.4.0 (4545)
(For this question use annex 061-9440A)Complete line 4 of the 'FLIGHT NAVIGATION LOG', positions 'G' to 'H'.What is the HDG°(M) and ETA?
a) HDG 344° - ETA 1336 UTC
b) HDG 354° - ETA 1326 UTC
c) HDG 034° - ETA 1336 UTC
d) HDG 344° - ETA 1303 UTC

61.5.4.0 (4546)
(For this question use annex 061-9441A)Complete line 5 of the 'FLIGHT NAVIGATION LOG', positions 'J' to 'K'.What is the HDG°(M) and ETA?
a) HDG 337° - ETA 1422 UTC
b) HDG 320° - ETA 1412 UTC
c) HDG 337° - ETA 1322 UTC
d) HDG 320° - ETA 1432 UTC

61.5.4.0 (4547)
(For this question use annex 061-9442A)Complete line 6 of the 'FLIGHT NAVIGATION LOG', positions 'L' to 'M'.What is the HDG°(M) and ETA?
a) HDG 075° - ETA 1502 UTC
b) HDG 064° - ETA 1449 UTC
c) HDG 075° - ETA 1452 UTC
d) HDG 070° - ETA 1459 UTC

61.5.4.0 (4548)
The flight log gives the following data :""True track, Drift, True heading, Magnetic variation, Magnetic heading, Compass deviation, Compass heading""The right solution, in the same order, is :
a) 119°, 3°L, 122°, 2°E, 120°, +4°, 116°
b) 115°, 5°R, 120°, 3°W, 123°, +2°, 121°
c) 117°, 4°L, 121°, 1°E, 122°, -3°, 119°
d) 125°, 2°R, 123°, 2°W, 121°, -4°, 117°

61.5.4.0 (4549)
(For this question use appendix)Given:TAS is120 kt. ATA 'X' 1232 UTC,ETA 'Y' 1247 UTC,ATA 'Y' is 1250 UTC. What is ETA 'Z'?
a) 1302 UTC
b) 1257 UTC
c) 1300 UTC
d) 1303 UTC

61.5.5.0 (4550)
The purpose of the Flight Management System (FMS), as for example installed in the B737-400, is to provide:
a) continuous automatic navigation guidance and performance management
b) manual navigation guidance and automatic performance management
c) continuous automatic navigation guidance as well as manual performance management
d) both manual navigation guidance and performance management

61.5.5.0 (4551)
Which component of the B737-400 Flight Management System (FMS) is used to

enter flight plan routeing and performance parameters?
a) Multi-Function Control Display Unit
b) Flight Management Computer
c) Inertial Reference System
d) Flight Director System

61.5.5.0 (4552)
What indication, if any, is given in the B737-400 Flight Management System if radio updating is not available?
a) A warning message is displayed on the EHSI and MFDU
b) A warning message is displayed on the IRS displays
c) A warning message is displayed on the Flight Director System
d) No indication is given so long as the IRS positions remain within limits

61.5.5.0 (4553)
What is the validity period of the 'permanent' data base of aeronautical information stored in the FMC In the B737-400 Flight Management System?
a) 28 days
b) one calendar month
c) 3 calendar months
d) 14 days

61.5.5.0 (4554)
In the B737-400 Flight Management System the CDUs are used during preflight to:
a) manually initialize the IRSs and FMC with dispatch information
b) automatically initialize the IRSs and FMC with dispatch information
c) manually initialize the Flight Director System and FMC with dispatch information
d) manually initialize the IRSs, FMC and Autothrottle with dispatch information

61.5.5.0 (4555)
How is the radio position determined by the FMC in the B737-400 Electronic Flight Instrument System?
a) DME/DME
b) DME/DME or VOR/DME
c) DME ranges and/ or VOR/ADF bearings
d) VOR/DME range and bearing

61.5.5.0 (4556)
In which of the following situations is the FMC present position of a B737-400 Electronic Flight Instrument System likely to be least accurate?
a) Just after take-off
b) At top of climb
c) At top of descent
d) On final approach

61.5.5.0 (4557)
What are, in order of highest priority followed by lowest, the two levels of message produced by the CDU of the B737-400 Electronic Flight Instrument System?
a) Alerting and Advisory
b) Urgent and Routine
c) Priority and Alerting
d) Urgent and Advisory

61.5.5.0 (4558)
Which of the following can all be stored as five letter waypoint identifiers through the CDU of a B737-400 Electronic Flight Instrument System?
a) Waypoint names, navaid identifiers, runway numbers, airport ICAO identifiers
b) Airway names, navaid identifiers, airport names, waypoint code numbers
c) Waypoint names, navaid frequencies, runway codes, airport ICAO identifiers
d) Waypoint names, navaid positions, airport ICAO identifiers, airport names

61.5.5.0 (4559)
Which of the following lists all the methods that can be used to enter 'Created Waypoints' into the CDU of a B737-400 Electronic Flight Instrument System?
a) Identifier bearing/distance, place bearing/place bearing, along-track displacement, latitude and longitude
b) Identifier bearing/distance, place bearing/place distance, along/across-track displacement, latitude and longitude
c) Identifier bearing/distance, place bearing/place bearing, latitude and longitude, waypoint name
d) Identifier bearing/distance, place distance/place distance, along-track displacement, latitude and longitude

61.5.5.0 (4560)
Which FMC/CDU page normally appears on initial power application to the B737-400 Electronic Flight Instrument System?
a) IDENT
b) INITIAL
c) POS INIT
d) PERF INIT

61.5.5.0 (4561)
Which of the following lists the first three pages of the FMC/CDU normally used to enter data on initial start-up of the B737-400 Electronic Flight Instrument System?
a) IDENT - POS INIT - RTE
b) POS INIT - RTE - IDENT
c) IDENT - RTE - DEPARTURE
d) POS INIT - RTE - DEPARTURE

61.6.1.0 (4562)
With reference to inertial navigation systems, a TAS input is:
a) required to provide a W/V read out
b) not required
c) required for Polar navigation
d) required for rhumb line navigation

61.6.1.0 (4563)
The platform of an inertial navigation system (INS) is maintained at right angles to the local vertical by applying corrections for the effects of:
a) aircraft manoeuvres, earth rotation, transport wander and coriolis
b) gyroscopic inertia, earth rotation and real drift

c) vertical velocities, earth precession, centrifugal forces and transport drift
d) movement in the yawing plane, secondary precession and pendulous oscillation

61.6.1.0 (4564)
Some inertial reference and navigation systems are known as ""strapdown"". This means that:
a) the gyroscopes and accelerometers become part of the unit's fixture to the aircraft structure
b) only the gyros, and not the accelerometers, become part of the unit's fixture to the aircraft structure
c) gyros and accelerometers are mounted on a stabilised platform in the aircraft
d) gyros and accelerometers need satellite information input to obtain a vertical reference

61.6.1.0 (4565)
In order to maintain an accurate vertical using a pendulous system, an aircraft inertial platform incorporates a device:
a) with damping and a period of 84.4 MIN
b) without damping and a period of 84.4 MIN
c) without damping and a period of 84.4 SEC
d) with damping and a period of 84.4 SEC

61.6.1.0 (4566)
The term drift refers to the wander of the axis of a gyro in:
a) the horizontal plane
b) the vertical plane
c) the vertical and horizontal plane
d) any plane

61.6.1.0 (4567)
The resultant of the first integration from the north/south accelerometer of an inertial navigation system (INS) in the NAV MODE is:
a) velocity along the local meridian
b) groundspeed
c) change latitude
d) latitude

61.6.1.0 (4568)
Double integration of the output from the east/west accelerometer of an inertial navigation system (INS) in the NAV MODE give:
a) distance east/west
b) vehicle longitude
c) distance north/south
d) velocity east/west

61.6.1.0 (4569)
In an Inertial Navigation System (INS), Ground Speed (GS) is calculated:
a) by integrating measured acceleration
b) from TAS and W/V from Air Data Computer (ADC)
c) from TAS and W/V from RNAV data
d) by integrating gyro precession in N/S and E/W directions respectively

61.6.1.0 (4570)
One of the errors inherent in a ring laser gyroscope occurs at low input rotation rates tending towards zero when a phenomenon known as 'lock-in' is experienced. What is the name of the technique, effected by means of a piezo-electric motor, that is used to correct this error?
a) dither
b) cavity rotation
c) zero drop
d) beam lock

61.6.1.0 (4571)
The resultant of the first integration of the output from the east/west accelerometer of an inertial navigation system (INS) in NAV MODE is:
a) velocity along the local parallel of latitude
b) change of longitude
c) vehicle longitude
d) departure

61.6.1.0 (4572)
Which of the following lists, which compares an Inertial Reference System that utilises Ring Laser Gyroscopes (RLG) instead of conventional gyroscopes, is completely correct?
a) There is little or no 'spin up' time and it is insensitive to gravitational ('g') forces
b) The platform is kept stable relative to the earth mathematically rather than mechanically but it has a longer 'spin up' time
c) It does not suffer from 'lock in' error and it is insensitive to gravitational ('g') forces
d) There is little or no 'spin up' time and it does not suffer from 'lock in' error

61.6.1.0 (4573)
The principle of 'Schuler Tuning' as applied to the operation of Inertial Navigation Systems/ Inertial Reference Systems is applicable to:
a) both gyro-stabilised platform and 'strapdown' systems
b) only gyro-stabilised systems
c) both gyro-stabilised and laser gyro systems but only when operating in the non 'strapdown' mode
d) only to 'strapdown' laser gyro systems

61.6.1.0 (4574)
What additional information is required to be input to an Inertial Navigation System (INS) in order to obtain an W/V readout?
a) TAS
b) IAS
c) Altitude and OAT
d) Mach Number

61.6.1.0 (4575)
What is the name given to an Inertial Reference System (IRS) which has the gyros and accelerometers as part of the unit's fixture to the aircraft structure?
a) Strapdown
b) Rigid

c) Solid state
d) Ring laser

61.6.2.0 (4576)
During initial alignment an inertial navigation system is north aligned by inputs from:
a) horizontal accelerometers and the east gyro
b) the aircraft remote reading compass system
c) computer matching of measured gravity magnitude to gravity magnitude of initial alignment
d) vertical accelerometers and the north gyro

61.6.2.0 (4577)
During the initial alignment of an inertial navigation system (INS) the equipment:
a) will not accept a 10° error in initial latitude but will accept a 10° error in initial longitude
b) will accept a 10° error in initial latitude but will not accept a 10° error in initial longitude
c) will not accept a 10° error in initial latitude or initial longitude
d) will accept a 10° error in initial latitude and initial longitude

61.6.2.0 (4578)
Which of the following statement is correct concerning gyro-compassing of an inertial navigation system (INS)?
a) Gyro-compassing of an INS is not possible in flight because it cannot differentiate between movement induced and misalignment induced accelerations.
b) Gyro-compassing of an INS is possible in flight because it can differentiate between movement induced and misalignment induced accelerations.
c) Gyro-compassing of an INS is possible in flight because it cannot differentiate between movement induced and misalignment induced accelerations.
d) Gyro-compassing of an INS is not possible in flight because it can differentiate between movement induced and misalignment induced accelerations.

61.6.2.0 (4579)
Which of the following statements concerning the loss of alignment by an Inertial Reference System (IRS) in flight is correct?
a) The navigation mode, including present position and ground speed outputs, is inoperative for the remainder of the flight
b) The IRS has to be coupled to the remaining serviceable system and a realignment carried out in flight
c) The mode selector has to be rotated to ATT then back through ALIGN to NAV in order to obtain an in-flight realignment
d) It is not usable in any mode and must be shut down for the rest of the flight

61.6.2.0 (4580)
The alignment time, at mid-latitudes, for an Inertial Reference System using laser ring gyros is approximately:
a) 10 MIN
b) 20 MIN
c) 2 MIN
d) 5 MIN

61.6.2.0 (4581)
Which of the following statements concerning the alignment procedure for Inertial Navigation Systems(INS)/Inertial Reference Systems (IRS) at mid-latitudes is correct?
a) INS/IRS can be aligned in either the ALIGN or NAV mode
b) INS/IRS can only be aligned in the ALIGN mode
c) INS/IRS can be aligned in either the ALIGN or ATT mode
d) INS/IRS can only be aligned in NAV mode

61.6.2.0 (4582)
A pilot accidently turning OFF the INS in flight, and then turns it back ON a few moments later. Following this incident:
a) it can only be used for attitude reference
b) no useful information can be obtained from the INS
c) everything returns to normal and is usable
d) the INS is usable in NAV MODE after a position update

61.6.3.0 (4583)
The azimuth gyro of an inertial unit has a drift of 0.01°/HR.After a flight of 12 HR with a ground speed of 500 kt, the error on the aeroplane position is approximately :
a) 12 NM
b) 1 NM
c) 6 NM
d) 60 NM

61.6.3.0 (4584)
The drift of the azimuth gyro on an inertial unit induces an error in the position given by this unit. ""t"" being the elapsed time.The total error is:
a) proportional to t
b) proportional to the square of time, t^2
c) proportional to t/2
d) sinusoîdal

61.6.4.0 (4585)
With reference to an inertial navigation system (INS), the initial great circle track between computer inserted waypoints will be displayed when the control display unit (CDU) is selected to:
a) DSRTK/STS
b) HDG/DA
c) TK/GS
d) XTK/TKE

61.6.4.0 (4586)
Gyrocompassing of an inertial reference system (IRS) is accomplished with the mode selector switched to:
a) ALIGN
b) STBY
c) ATT/REF
d) ON

61.6.4.0 (4587)
Which of the following correctly lists the order of available selections of the Mode Selector switches of an inertial reference system (IRS) mode panel?
a) OFF - ALIGN - NAV - ATT
b) OFF - ON - ALIGN - NAV
c) OFF - STBY - ALIGN - NAV
d) OFF - ALIGN - ATT - NAV

61.6.4.0 (4588)
ATT Mode of the Inertial Reference System (IRS) is a back-up mode providing:
a) only attitude and heading information
b) only attitude information
c) navigation information
d) altitude, heading and position information

61.6.4.0 (4589)
Which of the following statements concerning the operation of an Inertial Navigation System (INS)/Inertial Reference System (IRS) is correct?
a) NAV mode must be selected prior to movement of the aircraft off the gate
b) NAV mode must be selected on the runway just prior to take-off
c) NAV mode must be selected prior to the loading of passengers and/or freight
d) NAV mode must be selected when the alignment procedure is commenced

61.6.4.0 (4590)
Which of the following statements concerning the aircraft positions indicated on a triple fit Inertial Navigation System (INS)/ Inertial Reference System (IRS) on the CDU is correct?
a) The positions are likely to differ because they are calculated from different sources
b) The positions will be the same because they are an average of three different positions
c) The positions will only differ if one of the systems has been decoupled because of a detected malfunction
d) The positions will only differ if an error has been made when inputting the present position at the departure airport

61.6.4.0 (4591)
Waypoints can be entered in an INS memory in different formats.In which of the following formats can waypoints be entered into all INSs?
a) geographic coordinates
b) bearing and distance
c) hexadecimal
d) by waypoints name

61.6.4.0 (4592)
An aircraft equipped with an Inertial Navigation System (INS) flies with INS 1 coupled with autopilot 1. Both inertial navigation systems are navigating from way-point A to B. The inertial systems' Central Display Units (CDU) sho shows:- XTK on INS 1 = 0- XTK on INS 2 = 8L(XTK = cross track)From this information it can be deduced that:
a) at least one of the inertial navigaton systems is drifting
b) only inertial navigation system No. 2 is drifting
c) only inertial navigation system No. 1 is drifting
d) the autopilot is unserviceable in NAV mode

61.6.5.0 (4593)
An aircraft is flying with the aid of an inertial navigation system (INS) connected to the autopilot. The following two points have been entered in the INS computer:WPT 1: 60°N 030°WWPT 2: 60°N 020°WWhen 025°W is passed the latitude shown on the display unit of the inertial navigation system will be:
a) 60°05.7'N
b) 60°00.0'N
c) 59°49.0'N
d) 60°11.0'N

61.6.5.0 (4594)
An aircraft travels from point A to point B, using the autopilot connected to the aircraft's inertial system. The coordinates of A (45°S 010°W) and B (45°S 030°W) have been entered.The true course of the aircraft on its arrival at B, to the nearest degree, is:
a) 277°
b) 284°
c) 263°
d) 270°

61.6.5.0 (4595)
As the INS position of the departure aerodrome, coordinates 35°32.7'N 139°46.3'W are input instead of 35°32.7'N 139°46.3'E. When the aircraft subsequently passes point 52°N 180°W, the longitude value shown on the INS will be:
a) 099° 32.6'W
b) 099° 32.6'E
c) 080° 27.4'E
d) 080° 27.4'W

61.6.5.0 (4596)
The following points are entered into an inertial navigation system (INS).WPT 1: 60°N 30°WWPT 2: 60°N 20°WWPT 3: 60°N 10°WThe inertial navigation system is connected to the automatic pilot on route (1-2-3).The track change when passing WPT 2 will be approximately:
a) a 9° decrease
b) zero
c) a 9° increase
d) a 4° decrease

61.6.5.0 (4597)
The automatic flight control system (AFCS) in an aircraft is coupled to the guidance outputs from an inertial navigation system (INS) and the aircraft is flying from waypoint No. 2 (60°00'S 070°00'W) to No. 3 (60°00'S 080°00'W).Comparing the initial track (°T) at 070°00'W and the final track (°T) at 080°00'W, the difference between them is that the initial track is approximately:
a) 9° less than the final one
b) 5° greater than the final one

c) 9° greater than the final one
d) 5° less than the final one

61.6.5.0 (4598)
The automatic flight control system is coupled to the guidance outputs from an inertial navigation system. Which pair of latitudes will give the greatest difference between initial track read-out and the average true course given, in each case, a difference of longitude of 10°?
a) 60°N to 60°N
b) 60°N to 50°N
c) 30°S to 30°N
d) 30°S to 25°S

61.6.5.0 (4599)
The automatic flight control system (AFCS) in an aircraft is coupled to the guidance outputs from an inertial navigation system (INS).The aircraft is flying between inserted waypoints No. 3 (55°00'N 020°00'W) and No.4 (55°00'N 030°00'W).With DSRTK/STS selected on the CDU, to the nearest whole degree, the initial track read-out from waypoint No. 3 will be:
a) 274°
b) 278°
c) 266°
d) 270°

61.6.5.0 (4600)
Which of the following statements concerning the position indicated on the Inertial Reference System (IRS) display is correct?
a) It is not updated once the IRS mode is set to NAV
b) It is constantly updated from information obtained by the FMC
c) It is updated when 'go-around' is selected on take-off
d) The positions from the two IRSs are compared to obtain a 'best position' which is displayed on the IRS

61.6.5.0 (4601)
What is the source of magnetic variation information in a Flight Management System (FMS)?
a) Magnetic variation information is stored in each IRS memory, it is applied to the true heading calculated by the respective IRS
b) The main directional gyro which is coupled to the magnetic sensor (flux valve) positioned in the wingtip
c) The FMS calculates MH and MT from the FMC position
d) Magnetic variation is calculated by each IRS based on the respective IRS position and the aircraft magnetic heading

61.6.5.0 (4602)
Where and when are the IRS positions updated?
a) Only on the ground during the alignment procedure
b) During flight IRS positions are automatically updated by the FMC
c) IRS positions are updated by pressing the 'Take-off/ Go-around' button at the start of the take-off roll
d) Updating is normally carried out by the crew when over-flying a known position (VOR station or NDB)

61.6.5.0 (4603)
The sensors of an INS measure:
a) acceleration
b) velocity
c) the horizontal component of the earth's rotation
d) precession

62.1.1.0 (4604)
What is the approximate maximum theoretical range at which an aircraft at FL130 could receive information from a VDF facility which is sited 1024 FT above MSL?
a) 180 NM
b) 220 NM
c) 120 NM
d) 150 NM

62.1.1.0 (4605)
The maximum theoretical range at which an aircraft at FL80 can obtain bearings from a ground VDF facility sited 325 FT above MSL is:
a) 134 NM
b) 158 NM
c) 107 NM
d) 114 NM

62.1.1.0 (4606)
What is the minimum level that an aircraft, at a range of 113 NM, must fly in order to contact the tower on R/T for a VDF bearing from an airport sited 169 FT above MSL?
a) FL60
b) FL50
c) FL80
d) FL100

62.1.1.0 (4607)
What airborne equipment, if any, is required to be fitted in order that a VDF let-down may be flown?
a) VHF radio
b) VOR
c) none
d) VOR/DME

62.1.1.0 (4608)
Which of the following is an advantage of Ground/DF (VDF) let-down?
a) It only requires a VHF radio to be fitted to the aircraft
b) It is pilot interpreted and does not require the assistance of ATC
c) It does not require any special equipment to be fitted to the aircraft
d) It does not require any special equipment, apart from a VHF radio, to be installed in the aircraft or on the ground

62.1.1.0 (4609)
In which one of the following circumstances is ground direction finding (VDF) likely to be used to fix an aircraft's position?
a) When using the emergency VHF frequency 121.5 MHz
b) On first contact with ATC on crossing an international FIR boundary
c) When contacting ATC to join controlled airapace from the open FIR
d) When declaring an emergency on any frequency

62.1.2.0 (4610)
An aircraft is ""homing"" to a radio beacon whilst maintaining a relative bearing of zero. If the magnetic heading decreases, the aircraft is experiencing :
a) right drift
b) left drift
c) zero drift
d) a wind from the west

62.1.2.0 (4611)
Given : Compass heading 270°Deviation 2°WVariation 30°E Relative bearing 316° What is the QDR?
a) 044°
b) 226°
c) 046°
d) 224°

62.1.2.0 (4612)
An RMI indicates aircraft heading. To convert the RMI bearings of NDBs and VORs to true bearings the correct combination for the application of magnetic variation is:
a) NDB: aircraft positionVOR: beacon position
b) NDB: beacon positionVOR: beacon position
c) NDB: beacon positionVOR: aircraft position
d) NDB: aircraft positionVOR: aircraft position

62.1.2.0 (4613)
A radio beacon has an operational range of 10 NM. By what factor should the transmitter power be increased in order to achieve an operational range of 20 NM?
a) Four
b) Six
c) Eight
d) Two

62.1.2.0 (4614)
'Night Effect' which causes loss of signal and fading, resulting in bearing errors from NDB transmissions, is due to:
a) skywave distortion of the null position and is maximum at dawn and dusk
b) interference from other transmissions and is maximum at dusk when east of the NDB
c) static activity increasing at night particularly in the lower frequency band
d) the effect of the Aurora Borealis

62.1.2.0 (4615)
Quadrantal errors associated with aircraft Automatic Direction Finding (ADF) equipment are caused by:
a) signal bending by the aircraft metallic surfaces
b) signal bending caused by electrical interference from aircraft wiring
c) misalignment of the loop aerial
d) skywave/groundwave contamination

62.1.2.0 (4616)
Errors caused by the effect of coastal refraction on bearings at lower altitudes are maximum when the NDB is:
a) inland and the bearing crosses the coast at an acute angle
b) near the coast and the bearing crosses the coast at right angles
c) inland and the bearing crosses the coast at right angles
d) near the coast and the bearing crosses the coast at an acute angle

62.1.2.0 (4617)
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:
a) greater from the beacon that is 50 NM inland
b) the same from both beacons when the aircraft is on a relative bearing of 180° and 360°
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 090° and 270°

62.1.2.0 (4618)
What is the wavelength of an NDB transmitting on 375 kHZ?
a) 800 m
b) 8000 m
c) 8 m
d) 80 m

62.1.2.0 (4619)
Which of the following is likely to have the greatest effect on ADF accuracy?
a) Interference from other NDBs, particularly at night
b) Frequency drift at the ground station
c) Interference from other NDBs, particularly during the day
d) Mutual interference between aircraft aerials

62.1.2.0 (4620)
ADF bearings by an aeroplane by day within the published protection range should be accurate to within a maximum error of:
a) +/-5°
b) +/-10°
c) +/-2.5°
d) +/-2°

62.1.2.0 (4621)
Which of the following is the ICAO allocated frequency band for ADF receivers?
a) 200 - 1750 kHz
b) 255 - 455 kHz

c) 300 - 3000 kHz
d) 200 - 2000 kHz

62.1.2.0 (4622)
In order to obtain an ADF bearing the:
a) signal must be received by both the sense and loop aerials
b) sense aerial must be tuned separately
c) mode selector should be switched to 'loop'
d) BFO switch must be selected to 'ON'

62.1.2.0 (4623)
Factors liable to affect most NDB/ADF system performance and reliability include:
a) static interference - night effect - absence of failure warning system
b) static interference - station interference - latitude error
c) height error - station interference - mountain effect
d) coastal refraction - lane slip - mountain effect

62.1.2.0 (4624)
Which one of the following disturbances is most likely to cause the greatest inaccuracy in ADF bearings?
a) Local thunderstorm activity
b) Coastal effect
c) Quadrantal error
d) Precipitation interference

62.1.2.0 (4625)
The BFO selector on an ADF receiver is used to:
a) hear the IDENT of some NDB stations radiating a continuous wave signal
b) stop loop rotation
c) hear the IDENT and must always be switched ON
d) find the loop 'null' position

62.1.2.0 (4626)
An NDB transmits a signal pattern in the horizontal plane which is :
a) omnidirectional
b) bi-lobal circular
c) a cardioid balanced at 30 Hz
d) a beam rotating at 30 Hz

62.1.3.0 (4627)
Transmissions from VOR facilities may be adversely affected by:
a) uneven propagation over irregular ground surfaces
b) static interference
c) night effect
d) quadrantal error

62.1.3.0 (4628)
If VOR bearing information is used beyond the published protection range, errors could be caused by:
a) interference from other transmitters
b) noise from precipitation static exceeding the signal strength of the transmitter
c) sky wave interference from the same transmitter
d) sky wave interference from distant transmitters on the same frequency

62.1.3.0 (4629)
An aircraft is 100 NM from a VOR facility. Assuming no error when using a deviation indicator where 1 dot = 2° deviation, how many dots deviation from the centre line of the instrument will represent the limits of the airway boundary? (Assume that the airway is 10 NM wide)
a) 1.5
b) 3.0
c) 4.5
d) 6.0

62.1.3.0 (4630)
An airway 10 NM wide is to be defined by two VORs each having a resultant bearing accuracy of plus or minus 5.5°. In order to ensure accurate track guidance within the airway limits the maximum distance apart for the transmitter is approximately:
a) 105 NM
b) 50 NM
c) 165 NM
d) 210 NM

62.1.3.0 (4631)
An aircraft is required to approach a VOR via the 104° radial. Which of the following settings should be made on the VOR/ILS deviation indicator?
a) 284° with the TO flag showing
b) 284° with the FROM flag showing
c) 104° with the TO flag showing
d) 104° with the FROM flag showing

62.1.3.0 (4632)
An aircraft on a heading of 280°(M) is on a bearing of 090°(M) from a VOR. The bearing you should select on the OMNI bearing selector to centralise the VOR/ILS left/right deviation needle with a 'TO' indication is:
a) 270°
b) 090°
c) 100°
d) 280°

62.1.3.0 (4633)
A VOR is sited at position A (45°00'N, 010°00'E). An aircraft is located at position B (44°00'N, 010°00'E). Assuming that the magnetic variation at A is 10°W and at B is 15°W, the aircraft is on VOR radial:
a) 190°
b) 195°
c) 185°
d) 180°

62.1.3.0 (4634)
The VOR system is limited to about 1° of accuracy. One degree at 200 NM represents a width of:
a) 3.5 NM
b) 2.0 NM
c) 2.5 NM
d) 3.0 NM

62.1.3.0 (4635)
An aircraft is flying on the true track 090° towards a VOR station located near the equator where the magnetic variation is 15°E. The variation at the aircraft position is 8°E.The aircraft is on VOR radial:
a) 255°
b) 278°
c) 262°
d) 285°

62.1.3.0 (4636)
Given:Magnetic heading 280°VOR radial 090°What bearing should be selected on the omni-bearing selector in order to centralise the VOR deviation needle with a ""TO"" indication?
a) 270°
b) 280°
c) 100°
d) 090°

62.1.3.0 (4637)
A VOR is sited at position 58°00'N 073°00'W where the magnetic variation equals 32°W.An aircraft is located at position 56°00'N 073°00'W where the magnetic variation equals 28°W.The aircraft is on VOR radial:
a) 212
b) 208
c) 360
d) 180

62.1.3.0 (4638)
The principle used in VOR bearing measurement is:
a) phase comparison
b) envelope matching
c) beat frequency discrimination
d) difference in depth of modulation

62.1.3.0 (4639)
Which frequency band is used by VOR transmissions?
a) VHF
b) UHF
c) SHF
d) HF

62.1.3.0 (4640)
In order to plot a bearing from a VOR station, a pilot needs to know the magnetic variation:
a) at the VOR
b) at the aircraft location
c) at the half-way point between the aircraft and the station
d) at both the VOR and aircraft

62.1.3.0 (4641)
An aircraft is required to approach a VOR station via the 244° radial. In order to obtain correct sense indications the deviation indicator should be set to:
a) 064° with the TO flag showing
b) 064° with the FROM flag showing
c) 244° with the FROM flag showing
d) 244° with the TO flag showing

62.1.3.0 (4642)
What is the maximum theoretical range that an aircraft at FL150 can receive signals from a VOR situated 609 feet above MSL?
a) 184 NM
b) 220 NM
c) 147 NM
d) 156 NM

62.1.3.0 (4643)
An RMI slaved to a remote indicating compass has gone unserviceable and is locked on to a reading of 090°. The tail of the VOR pointer shows 135°. The available information from the VOR is:
a) Radial 135°, relative bearing unknown
b) Radial unknown, relative bearing 225°
c) Radial unknown, relative bearing 045°
d) Radial 315°, relative bearing unknown

62.1.3.0 (4644)
Which of the following statements concerning the variable, or directional, signal of a conventional VOR is correct?
a) The rotation of the variable signal at a rate of 30 times per second gives it the characteristics of a 30 Hz amplitude modulation
b) The transmitter varies the amplitude of the variable signal by 30 Hz each time it rotates
c) The transmitter changes the frequency of the variable signal by 30 Hz either side of the allocated frequency each time it rotates
d) The receiver adds 30 Hz to the variable signal before combining it with the reference signal

62.1.3.0 (4645)
The maximum theoretical range at which an aircraft at FL230 may receive signals from a VOR facility sited at mean sea level is:
a) 190 NM
b) 230 NM
c) 170 NM
d) 151 NM

62.1.3.0 (4646)
If an aircraft flies along a VOR radial it will follow a:

a) great circle track
b) rhumbline track
c) line of constant bearing
d) constant magnetic track

62.1.3.0 (4647)
An aircraft at 6400 FT will be able to receive a VOR groundstation at 100 FT above MSL at an approximate maximum range of :
a) 110 NM
b) 90 NM
c) 100 NM
d) 120 NM

62.1.3.0 (4648)
An aircraft at FL 100 should be able to receive a VOR groundstation at 100 FT above MSL at an approximate maximum range of :
a) 135 NM
b) 123 NM
c) 130 NM
d) 142 NM

62.1.3.0 (4649)
The maximum theoretical range at which an aircraft at FL210 may receive signals from a VOR facility sited 340 feet above mean sea level is approximately:
a) 204 NM
b) 245 NM
c) 163 NM
d) 183 NM

62.1.3.0 (4650)
In which frequency band do VOR transmitters operate?
a) VHF
b) UHF
c) SHF
d) EHF

62.1.3.0 (4651)
The two signals transmitted by a conventional VOR ground station are 90° out of phase on magnetic:
a) east
b) south
c) west
d) north

62.1.3.0 (4652)
An aircraft is flying on a heading of 270°(M). The VOR OBS is also set to 270° with the full left deflection and FROM flag displayed. In which sector is the aircraft from the VOR ground station?
a) NW
b) SW
c) SE
d) NE

62.1.3.0 (4653)
An Omni-bearing selector (OBS) shows full deflection to the left when within range of a serviceable VOR. What angular deviation are you from the selected radial?
a) 10° or more
b) less than 10°
c) 1.5° or more
d) 2.5 or more

62.1.3.0 (4654)
An aircraft is on radial 120 with a magnetic heading of 300°, the track selector (OBS) reads : 330. The indications on the Course Deviation Indicator (CDI) are 'fly':
a) left with 'TO' showing
b) right with 'TO' showing
c) right with 'FROM' showing
d) left with 'FROM' showing

62.1.3.0 (4655)
Given: Course Deviation Indicator (CDI) for a VOR is selected to 090°.From/To indicator indicates ""TO"".CDI needle is deflected halfway to the right.On what radial is the aircraft?
a) 275
b) 85
c) 265
d) 95

62.1.3.0 (4656)
The frequency range of a VOR receiver is :
a) 108 to 117.95 MHz
b) 108 to 111.95 MHz
c) 118 to 135.95 MHz
d) 108 to 135.95 MHz

62.1.3.0 (4657)
If the reference phase differs 30° with the variable phase the radial from the VOR station will be :
a) 030°
b) 330°
c) 210°
d) 150°

62.1.3.0 (4658)
Given:VOR station position N61° E025°, variation 13°E,Estimated position of an aircraft N59° E025°, variation 20°E.What VOR radial is the aircraft on?
a) 167°
b) 347°
c) 160°
d) 193°

62.1.3.0 (4659)
The captain of an aircraft flying at FL100 wishes to obtain weather information at the destination airfield from the airfield's VOR. At what maximum theoretical range will it be possible to obtain this information?
a) 123 NM
b) 123 km
c) 12.3 NM
d) 1230 km

62.1.3.0 (4660)
Given:Aircraft heading 160°(M),Aircraft is on radial 240° from a VOR,Selected course on HSI is 250°.The HSI indications are deviation bar:
a) behind the aeroplane symbol with the FROM flag showing
b) behind the aeroplane symbol with the TO flag showing
c) ahead of the aeroplane symbol with the FROM flag showing
d) ahead of the aeroplane symbol with the TO flag showing

62.1.4.0 (4661)
A DME station is located 1000 feet above MSL. An aircraft flying at FL 370, 15 NM away from the DME station, will have a DME reading of:
a) 16 NM
b) 14 NM
c) 15 NM
d) 17 NM

62.1.4.0 (4662)
Which of the following will give the most accurate calculation of aircraft ground speed?
a) A DME station sited on the flight route
b) An ADF sited on the flight route
c) A VOR station sited on the flight route
d) A DME station sited across the flight route

62.1.4.0 (4663)
In which situation will speed indications on an airborne Distance Measuring Equipment (DME) most closely represent the groundspeed of an aircraft flying at FL400?
a) When tracking directly towards the station at a range of 100 NM or more
b) When passing abeam the station and within 5 NM of it
c) When overhead the station, with no change of heading at transit
d) When tracking directly away from the station at a range of 10 NM

62.1.4.0 (4664)
The time taken for the transmission of an interrogation pulse by a Distance Measuring Equipment (DME) to travel to the ground transponder and return to the airborne receiver was 2000 micro-second. The slant range from the ground transponder was:
a) 165 NM
b) 186 NM
c) 296 NM
d) 330 NM

62.1.4.0 (4665)
An aircraft DME receiver does not lock on to its own transmissions reflected from the ground because:
a) they are not on the receiver frequency
b) DME transmits twin pulses
c) the pulse recurrence rates are varied
d) DME uses the UHF band

62.1.4.0 (4666)
The DME (Distance Measuring Equipment) operates within the following frequencies:
a) 962 to 1213 MHz
b) 108 to 118 MHz
c) 329 to 335 MHz
d) 962 to 1213 kHz.

62.1.4.0 (4667)
A DME is located at MSL.An aircraft passing vertically above the station at flight level FL 360 will obtain a DME range of approximately:
a) 6 NM
b) 7 NM
c) 11 NM
d) 8 NM

62.1.4.0 (4668)
During a flight at FL 210, a pilot does not receive any DME distance indication from a DME station located approximately 220 NM away.The reason for this is that the:
a) aeroplane is below the 'line of sight' altitude
b) aeroplane is circling around the station
c) altitude is too high
d) range of a DME system is always less than 200 NM

62.1.4.0 (4669)
A typical frequency employed in Distance Measuring Equipment (DME) is:
a) 1000 MHz
b) 10 MHz
c) 100 MHz
d) 100 GHz

62.1.4.0 (4670)
Distance Measuring Equipment (DME) operates in the:
a) UHF band and is a secondary radar system
b) VHF band and uses the principle of phase comparison
c) UHF band and is a primary radar system
d) SHF band and uses frequency modulation techniques

62.1.4.0 (4671)
For a conventional DME facility 'Beacon Saturation' will occur whenever the number of simultaneous interrogations exceeds:
a) 100
b) 200

c) 60
d) 80

62.1.4.0 (4672)
On a DME, display counters rotating throughout their range indicates:
a) the airborne receiver is conducting a range search
b) airborne equipment failure
c) ground equipment failure
d) the airborne equipment is conducting a frequency search

62.1.4.0 (4673)
The aircraft DME receiver is able to accept replies to its own transmissions and reject replies to other aircraft interrogations because:
a) pulse pairs are discreet to a particular aircraft
b) pulse pairs are amplitude modulated with the aircraft registration
c) aircraft interrogation signals and transponder responses are 63 MHz removed from each other
d) transmission frequencies are 63 MHz different for each aircraft

62.1.4.0 (4674)
The aircraft DME receiver cannot lock on to interrogation signals reflected from the ground because:
a) aircraft transmitter and DME ground station are transmitting on different frequencies
b) reflections are subject to doppler frequency shift
c) DME transmits twin pulses
d) DME pulse recurrence rates are varied

62.1.4.0 (4675)
The design requirements for DME stipulate that, at a range of 100 NM, the maximum systematic error should not exceed:
a) + or - 1.5 NM
b) + or - 3 NM
c) + or - 0.25 NM
d) + or - 1.25 NM

62.1.4.0 (4676)
ICAO specifications are that range errors indicated by Distance Measuring Equipment (DME) should not exceed:
a) + or - 0.25 NM plus 1.25% of the distance measured
b) + or - 0.5 NM or 3% of the distance measured whichever is the greater
c) + or - 1.25 NM plus 0.25% of the distance measured
d) + or - 0.25 NM plus 3% of the distance measured up to a maximum of 5 NM

62.1.4.0 (4677)
What is the maximum distance between VOR and DME/TACAN ground installations if they are to have the same morse code identifier?
a) 600 m
b) 2000 m
c) 60 m
d) 300 m

62.1.4.0 (4678)
A DME in tracking mode subsequently experiences a reduction in signal strength will switch the equipment in the first instance to:
a) memory mode
b) search mode
c) standby mode
d) signal controlled search

62.1.4.0 (4679)
Of what use, if any, is a military TACAN station to civil aviation ?
a) It can provide DME distance
b) It is of no use to civil aviation
c) It can provide a DME distance and magnetic bearing
d) It can provide a magnetic bearing

62.1.4.0 (4680)
A DME that has difficulty obtaining a ""lock-on"":(NOTE: PRF = pulse recurrence frequency, PPS = pulses per second)
a) stays in search mode but reduces PRF to max. 60 PPS after 15000 pulse pairs have been transmitted
b) stays in search mode without a reduction in PRF
c) stays in search mode but reduces PRF to max. 60 PPS after 100 seconds
d) alternates search mode with periods of memory mode lasting 10 seconds

62.1.4.0 (4681)
DME channels utilise frequencies of approximately:
a) 1000 MHz
b) 300 MHz
c) 110 MHz
d) 600 MHz

62.1.4.0 (4682)
A VOR and DME are co-located.You want to identify the DME by listening to the callsign.Having heard the same callsign 4 times in 30 seconds the:
a) DME callsign is the one with the higher pitch that was broadcast only once
b) DME callsign was not transmitted, the distance information is sufficient proof of correct operation
c) DME callsign is the one with the lower pitch that was broadcast several times
d) VOR and DME callsigns were the same and broadcast with the same pitch

62.1.5.0 (4683)
The amplitude modulation and the colour of an outer marker (OM) is:
a) 400 Hz, blue
b) 3000 Hz, blue
c) 1300 Hz, blue
d) 400 Hz, amber

62.1.5.0 (4684)
A Category 1 Instrument Landing System (ILS) ground installation provides accurate guidance from coverage limit down to:
a) 200 feet above the runway threshold

b) 50 feet above ILS reference point
c) runway surface
d) 200 feet above the inner marker

62.1.5.0 (4685)
The reason why pre take-off holding areas are sometimes further from the active runway when ILS Category 2 and 3 landing procedures are in progress than during good weather operations is:
a) aircraft manoeuvring near the runway may disturb guidance signals
b) heavy precipitation may disturb guidance signals
c) to increase distance from the runway during offset approach operations
d) to increase aircraft separation in very reduced visibility conditions

62.1.5.0 (4686)
An aircraft tracking to intercept the Instrument Landing System (ILS) localiser inbound on the approach side, outside the published ILS coverage angle:
a) may receive false course indications
b) will not normally receive signals
c) will receive signals without identification coding
d) can expect signals to give correct indications

62.1.5.0 (4687)
The MIDDLE MARKER of an Instrument Landing System (ILS) facility is identified audibly and visually by a series of:
a) alternate dots and dashes and an amber light flashing
b) two dashes per second and a blue light flashing
c) dots and a white light flashing
d) dashes and an amber light flashing

62.1.5.0 (4688)
The OUTER MARKER of an Instrument Landing System (ILS) facility transmits on a frequency of:
a) 75 MHz and is modulated by morse at two dashes per second
b) 200 MHz and is modulated by alternate dot/dash in morse
c) 75 MHz and is modulated by alternate dot/dash in morse
d) 300 MHz and is modulated by morse at two dashes per second

62.1.5.0 (4689)
What approximate rate of descent is required in order to maintain a 3° glide path at a groundspeed of 120 kt?
a) 600 FT/MIN
b) 550 FT/MIN
c) 800 FT/MIN
d) 950 FT/MIN

62.1.5.0 (4690)
The outer marker of an ILS with a 3° glide slope is located 4.6 NM from the threshold. Assuming a glide slope height of 50 FT above the threshold, the approximate height of an aircraft passing the outer marker is:
a) 1450 FT
b) 1400 FT
c) 1350 FT
d) 1300 FT

62.1.5.0 (4691)
What is the approximate angular coverage of reliable navigation information for a 3° ILS glide path out to a distance of 10 NM?
a) 1.35° above the horizontal to 5.25° above the horizontal and 8° each side of the localiser centreline
b) 0.45° above the horizontal to 1.75° above the glide path and 8° each side of the localiser centreline
c) 0.7° above and below the glide path and 2.5° each side of the localiser centreline
d) 3° above and below the glide path and 10° each side of the localiser centreline

62.1.5.0 (4692)
ILS is subject to false glide paths resulting from:
a) multiple lobes of radiation patterns in the vertical plane
b) spurious signals reflected by nearby obstacles
c) back-scattering of antennas
d) ground returns ahead of the antennas

62.1.5.0 (4693)
What is the colour sequence when passing over an Outer, Middle and Inner Marker beacon?
a) blue - amber - white
b) amber - white - green
c) white - amber - blue
d) blue - green - white

62.1.5.0 (4694)
An aircraft carrying out an ILS approach is receiving more 90 Hz than 150 Hz modulation notes from both the localiser and glidepath transmitters. The ILS indication will show:
a) Fly right and fly down
b) Fly left and fly down
c) Fly right and fly up
d) Fly left and fly up

62.1.5.0 (4695)
An aircraft carrying out a 3° glidepath ILS approach 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:
a) 150 FT/MIN
b) 250 FT/MIN
c) 50 FT/MIN
d) 100 FT/MIN

62.1.5.0 (4696)
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)..........

a) (i) the same (ii) modulation frequencies
b) (i) the same (ii) phases
c) (i) different (ii) modulation frequencies
d) (i) different (ii) phases

62.1.5.0 (4697)
In which frequency band does an ILS glide slope transmit?
a) UHF
b) VHF
c) SHF
d) EHF

62.1.5.0 (4698)
Assuming a five dot display, what does each of the dots on either side of the ILS localizer cockpit display represent :
a) 0.5 degrees
b) 1.5 degrees
c) 2.5 degrees
d) 2.0 degrees

62.1.5.0 (4699)
Outer marker transmits on 75 MHz and has an aural frequency of:
a) 400 Hz
b) 1300 Hz
c) 2000 Hz
d) 3000 Hz

62.1.5.0 (4700)
Every 10 kt decrease in groundspeed, on a 3° ILS glidepath, will require an approximate:
a) decrease in the aircraft's rate of descent of 50 FT/MIN
b) increase in the aircraft's rate of descent of 50 FT/MIN
c) decrease in the aircraft's rate of descent of 100 FT/MIN
d) increase in the aircraft's rate of descent of 100 FT/MIN

62.1.5.0 (4701)
Instrument Landing Systems (ILS) Glide Paths provide azimuth coverage (i) .... ° each side of the localiser centre-line to a distance of (ii) .... NM from the threshold.
a) (i) 8 (ii) 10
b) (i) 25 (ii) 17
c) (i) 35 (ii) 25
d) (i) 5 (ii) 8

62.1.5.0 (4702)
The rate of descent required to maintain a 3.25° glide slope at a groundspeed of 140 kt is approximately:
a) 800 FT/MIN
b) 850 FT/MIN
c) 670 FT/MIN
d) 700 FT/MIN

62.1.5.0 (4703)
Where, in relation to the runway, is the ILS localiser transmitting aerial normally situated?
a) On the non-approach end of the runway about 300 m from the runway on the extended centreline
b) At the approach end of the runway about 300 m from touchdown on the centreline
c) At the non-approach end about 150 m to one side of the runway and 300 m along the extended centreline
d) At the approach end about 150 m to one side of the runway and 300 m from touchdown

62.1.5.0 (4704)
A Cat III ILS glidepath transmitter provides reliable guidance information down to:
a) the surface of the runway
b) a maximum height of 200 ft above the runway
c) a maximum height of 100 ft above the runway
d) a maximum height of 50 ft above the runway

62.1.5.0 (4705)
Which of the following is an ILS localiser frequency?
a) 109.15 MHz
b) 108.25 MHz
c) 110.20 MHz
d) 112.10 MHz

62.1.5.0 (4706)
What approximate rate of descent is required in order to maintain a 3° glidepath at a groundspeed of 90 kt?
a) 450 FT/MIN
b) 400 FT/MIN
c) 600 FT/MIN
d) 700 FT/MIN

62.1.5.0 (4707)
The heading rose of an HSI is frozen on 200°.Lined up on the ILS of runway 25, the localizer needle will be:
a) centred
b) left of centre
c) right of centre
d) centred with the 'fail' flag showing

62.1.6.0 (4708)
The azimuth transmitter of a Microwave Landing System (MLS) provides a fan-shaped horizontal approach zone which is usually:
a) + or - 40° of the runway centre-line
b) + or - 50° of the runway centre-line
c) + or - 60° of the runway centre-line
d) + or - 30° of the runway centre-line

62.1.6.0 (4709)
Which one of the following is an advantage of a Microwave Landing System (MLS) compared with an Instrument Landing System (ILS)?

a) It is insensitive to geographical site and can be installed at sites where it is not possible to use an ILS
b) It does not require a separate azimuth (localiser) and elevation (azimuth) transmitter
c) The installation does not require to have a separate method (marker beacons or DME) to determine range
d) There is no restriction on the number of ground installations that can be operated because there is an unlimited number of frequency channels available

62.1.6.0 (4710)
MLS installations notified for operation, unless otherwise stated, provide azimuth coverage of:
a) + or - 40° about the nominal courseline out to a range of 20 NM
b) + or - 20° about the nominal courseline out to a range of 20 NM
c) + or - 40° about the nominal courseline out to a range of 30 NM
d) + or - 20° about the nominal courseline out to a range of 10 NM

62.1.6.0 (4711)
In which frequency band does the Microwave Landing System (MLS) operate?
a) SHF
b) EHF
c) VHF
d) UHF

62.1.6.0 (4712)
Which one of the following methods is used by a Microwave Landing System (MLS) to indicate distance from the runway threshold?
a) A DME co-located with the MLS transmitters
b) Timing the interval between the transmission and reception of primary radar pulses from the aircraft to MLS station
c) Measurement of the frequency shift between the MLS azimuth and elevation transmissions
d) Timing the interval between the reception of sequential secondary radar pulses from the MLS station to the aircraft

62.1.6.0 (4713)
Which one of the following correctly lists the major ground based components of a Microwave Landing System (MLS)?
a) Separate azimuth and elevation transmitters, DME facility
b) Separate azimuth and elevation transmitters, outer and middle marker beacons
c) Combined azimuth and elevation transmitter, DME facility
d) Combined azimuth and elevation transmitter, outer and inner marker beacons

62.2.1.0 (4714)
The minimum range of a primary radar, using the pulse technique, is determined by the (i)........ , the maximum unambiguous range by the (ii).........
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

62.2.1.0 (4715)
Which one of the following statements is correct concerning the use in primary radar of continuous wave transmissions as compared with pulse transmissions?
a) It eliminates the minimum target reception range
b) A smaller common transmitter and receiver aerial can be used
c) It is less effective in short range radars but more effective in long range radars
d) The equipment required is more complex in continuous wave radar but this is offset by greater reliability and accuracy

62.2.1.0 (4716)
A Primary radar operates on the principle of:
a) pulse technique
b) transponder interrogation
c) phase comparison
d) continuous wave transmission

62.2.1.0 (4717)
The main factor which determines the minimum range that can be measured by a pulsed radar is pulse:
a) length
b) amplitude
c) repetition rate
d) frequency

62.2.1.0 (4718)
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)
a) 405 pps
b) 782 pps
c) 308 pps
d) 375 pps

62.2.1.0 (4719)
The maximum range of primary radar depends on :
a) pulse recurrence frequency
b) wave length
c) frequency
d) pulse length

62.2.1.0 (4720)
For any given circumstances, in order to double the effective range of a primary radar the power output must be increased by a factor of:
a) 16
b) 2
c) 4
d) 8

62.2.1.0 (4721)
The prime factor in determining the maximum unambiguous range of a primary radar is the:
a) pulse recurrence rate
b) power output

c) size of parabolic receiver aerial
d) height of the transmitter above the ground

62.2.1.0 (4722)
Which of the following types of radar systems are most suited for short range operation?
a) primary continuous wave
b) centimetric pulse
c) millimetric pulse
d) secondary continuous wave

62.2.1.0 (4723)
In which frequency band do most airborne weather, and ground based ATC, radar systems operate?
a) SHF
b) UHF
c) EHF
d) VHF

62.2.1.0 (4724)
In relation to radar systems that use pulse technology, the term 'Pulse Recurrence Rate (PRR)' signifies the:
a) number of pulses per second
b) delay after which the process re-starts
c) the number of cycles per second
d) ratio of pulse period to pulse width

62.2.1.0 (4725)
The theoretical maximum range for an Airborne Weather Radar is determined by the:
a) pulse recurrence frequency
b) transmission power
c) size of the aerial
d) transmission frequency

62.2.1.0 (4726)
In a primary radar using pulse technique, pulse length determines:
a) minimum measurable range
b) target discrimination
c) maximum measurable range
d) beam width

62.2.1.0 (4727)
In a primary radar using pulse technique, pulse recurrence frequency (PRF)/pulse recurrence rate (PRR) determines:
a) maximum theoretical range
b) target discrimination
c) minimum range
d) beam width

62.2.1.0 (4728)
In a primary radar using pulse technique, the ability to discriminate between targets in azimuth is a factor of:
a) beam width
b) aerial rotation rate
c) Pulse Recurrence Rate (PRR)
d) pulse length

62.2.1.0 (4729)
Which of the following radar equipments operate by means of the pulse technique? 1. Aerodrome Surface Movement Radar2. Airborne Weather Radar3. Secondary Surveillance Radar (SSR)4. Aerodrome Surveillance (approach) Radar
a) 1, 2, 3 and 4
b) 1, 2 and 4 only
c) 2, 3 and 4 only
d) 2 and 4 only

62.2.2.0 (4730)
Assuming sufficient transmission power, the maximum range of a ground radar with a pulse repetition frequency of 450 pulses per second is: (Given: velocity of light is 300 000 km/second)
a) 333 km
b) 666 km
c) 1333 km
d) 150 km

62.2.2.0 (4731)
A radar facility transmitting at a Pulse Recurrence Frequency (PRF) of 1200 pulses/second will have a maximum unambiguous range of approximately:
a) 69 NM
b) 135 NM
c) 270 NM
d) 27 NM

62.2.2.0 (4732)
A ground radar transmitting at a PRF of 1200 pulses/second will have a maximum unambiguous range of approximately:
a) 67 NM
b) 135 NM
c) 270 NM
d) 27 NM

62.2.2.0 (4733)
Complete the following statement. Aircraft Surface movement Radar operates on frequencies in the (i) .... band employing an antenna that rotates at approximately (ii) .... revolutions per minute, it is (iii) .... possible to determine the type of aircraft from the return on the radar screen.
a) (i) SHF (ii) 60 (iii) sometimes
b) (i) EHF (ii) 30 (iii) never
c) (i) SHF (ii) 10 (iii) always
d) (i) EHF (ii) 100 (iii) never

62.2.2.0 (4734)
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)
a) 1620 pps
b) 3240 pps
c) 610 pps
d) 713 pps

62.2.2.0 (4735)
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:
a) 3000
b) 6000
c) 167
d) 330

62.2.2.0 (4736)
Which combination of characteristics gives best screen picture in a primary search radar?
a) short pulse length and narrow beam
b) long pulse length and wide beam
c) long pulse length and narrow beam
d) short pulse length and wide beam

62.2.2.0 (4737)
The maximum range obtainable from an ATC Long Range Surveillance Radar is approximately:
a) 300 NM
b) 200 NM
c) 100 NM
d) 400 NM

62.2.2.0 (4738)
On which of the following radar displays is it possible to get an indication of the shape, and to some extent the type, of the aircraft generating the return?
a) Aerodrome Surface Movement Radar (ASMR)
b) Secondary Surveillance Radar (SSR)
c) Aerodrome Surveillance (approach) Radar
d) Airborne Weather Radar (AWR)

62.2.3.0 (4739)
Airborne weather radar systems use a wavelength of approximately 3 cm in order to:
a) detect the larger water droplets
b) transmit at a higher pulse repetition frequency for extended range
c) obtain optimum use of the Cosecant squared beam
d) detect the smaller cloud formations as well as large

62.2.3.0 (4740)
The ISO-ECHO facility of an airborne weather radar is provided in order to:
a) detect areas of possible severe turbulence in cloud
b) give an indication of cloud tops
c) inhibit unwanted ground returns
d) extend the mapping range

62.2.3.0 (4741)
In the MAPPING MODE the airborne weather radar utilises a:
a) fan shaped beam effective up to a maximum of 50 NM to 60 NM range
b) fan shaped beam effective up to a range of 150 NM
c) pencil beam to a maximum range of 60 NM
d) pencil beam effective from zero to 150 NM

62.2.3.0 (4742)
Which of the following cloud types is most readily detected by airborne weather radar when using the 'weather beam'?
a) cumulus
b) cirrocumulus
c) stratus
d) altostratus

62.2.3.0 (4743)
In which mode of operation does the aircraft weather radar use a cosecant radiation pattern.
a) MAPPING
b) CONTOUR
c) WEATHER
d) MANUAL

62.2.3.0 (4744)
In an Airborne Weather Radar that has a colour cathode ray tube (CRT) the areas of greatest turbulence are indicated on the screen by:
a) colour zones being closest together
b) blank iso-echo areas where there is no colour
c) large areas of flashing red colour
d) iso-echo areas which are coloured black

62.2.3.0 (4745)
Which of the following is a complete list of airborne weather radar antenna stabilisation axes?
a) roll and pitch
b) roll, pitch and yaw
c) pitch and yaw
d) roll and yaw

62.2.3.0 (4746)
In an Airborne Weather Radar that has a colour cathode ray tube (CRT) increasing severity of rain and turbulence is generally shown by a change of colour from:
a) green to yellow to red
b) yellow to amber to blue
c) green to red to black
d) yellow to orange to red

62.2.3.0 (4747)
A frequency of 10 GHz is considered to be the optimum for use in an airborne weather radar system because:
a) the larger water droplets will give good echoes and the antenna can be kept relatively small
b) greater detail can be obtained at the more distant ranges of the smaller water droplets
c) static interference is minimised
d) less power output is required in the mapping mode

62.2.3.0 (4748)
In general the operation of airborne weather radar equipment on the ground is:
a) only permitted with certain precautions, to safeguard health of personnel and to protect equipment
b) permitted anywhere
c) totally prohibited
d) unrestrictedly permitted in aerodrome maintenance areas

62.2.3.0 (4749)
The pencil shaped beam of an airborne weather radar is used in preference to the mapping mode for the determination of ground features:
a) beyond 50 to 60 NM because more power can be concentrated in the narrower beam
b) beyond 100 NM because insufficient antenna tilt angle is available with the mapping mode
c) beyond 150 NM because the wider beam gives better definition
d) when approaching coast-lines in polar regions

62.2.3.0 (4750)
A frequency of airborne weather radar is :
a) 9375 MHz
b) 9375 GHz
c) 9375 kHz
d) 93.75 MHz

62.2.3.0 (4751)
A weather radar, set to the 100 NM scale, shows a squall at 50NM. By changing the scale to 50 NM, the return on the radar screen should:
a) increase in area and move to the top of the screen
b) increase in area and appear nearer to the bottom of the screen
c) decrease in area but not change in position on the screen
d) decrease in area and move to the top of the screen

62.2.3.0 (4752)
In weather radar the use of a cosecant beam in 'Mapping' mode enables:
a) scanning of a large ground zone producing echos whose signals are practically independent of distance
b) better reception of echos on contrasting terrain such as ground to sea
c) a greater radar range to be achieved
d) higher definition echoes to be produced giving a clearer picture

62.2.3.0 (4753)
In Airborne Weather Radar (AWR), the main factors which determine whether a cloud will be detected are:
a) size of the water drops,wavelength/frequency used
b) range from cloud,wavelength/frequency used
c) size of the water drops,diameter of radar scanner
d) rotational speed of radar scanner,range from cloud

62.2.3.0 (4754)
In order to ascertain whether a cloud return on an Aircraft Weather Radar (AWR) is at or above the height of the aircaft, the tilt control should be set to: (Assume a beam width of 5°)
a) 2.5° up
b) 0°
c) 2.5° down
d) 5° up

62.2.3.0 (4755)
When switching on the weather radar, after start-up, a single very bright line appears on the screen.This means that the:
a) scanning of the cathode ray tube is faulty
b) transmitter is faulty
c) scanner is not rotating
d) receiver is faulty

62.2.3.0 (4756)
The advantage of the use of slotted antennas in modern radar technology is to:
a) virtually eliminate lateral lobes and as a consequence concentrate more energy in the main beam
b) simultaneously transmit weather and mapping beams
c) have a wide beam and as a consequence better target detection
d) eliminate the need for azimuth slaving

62.2.3.0 (4757)
Which of the following lists phenomena that CANNOT be detected by weather radar?
a) snow, clear air turbulence
b) dry hail, clear air turbulence
c) clear air turbulence, turbulence in cloud with precipitation
d) snow, turbulence in clouds with precipitation

62.2.3.0 (4758)
Which of the following equipments uses primary radar principles?
a) Airborne weather radar (AWR)
b) Secondary Surveillance Radar (SSR)
c) Distance Measuring Equipment (DME)
d) Global Positioning System (GPS)

62.2.4.0 (4759)
When Mode C is selected on the aircraft SSR transponder the additional information transmitted is:
a) flight level based on 1013.25 hPa
b) altitude based on regional QNH

c) aircraft height based on sub-scale setting
d) height based on QFE

62.2.4.0 (4760)
The ground Secondary Surveillance Radar (SSR) equipment incorporates a transmitter and receiver respectively operating in the following frequencies:
Transmitter Receiver
a) 1030 MHz 1090 MHz
b) 1090 MHz 1030 MHz
c) 1090 MHz 1090 MHz
d) 1030 MHz 1030 MHz

62.2.4.0 (4761)
Why is a secondary radar display screen free of storm clutter?
a) The principle of 'echo' return is not used in secondary radar
b) The frequencies employed are too high to give returns from moisture sources
c) A moving target indicator facility suppresses the display of static or near static returns
d) The frequencies employed are too low to give returns from moisture sources

62.2.4.0 (4762)
In order to indicate radio failure the aircraft SSR transponder should be selected to code:
a) 7600
b) 7700
c) 7000
d) 7500

62.2.4.0 (4763)
In order to indicate unlawful interference with the planned operation of the flight, the aircraft Secondary Surveillance Radar (SSR) transponder should be selected to:
a) 7500
b) 7600
c) 7700
d) 7000

62.2.4.0 (4764)
When an aircraft is operating its Secondary Surveillance Radar in Mode C an air traffic controller's presentation gives information regarding the aircraft's indicated flight level that is accurate to within:
a) + or - 50 FT
b) + or - 75 FT
c) + or - 100 FT
d) + or - 25 FT

62.2.4.0 (4765)
The frequency of an SSR ground transmission is:
a) 1030 +/- 0.2 Mhz
b) 1050 +/- 0.5 Mhz
c) 1090 +/- 0.3 Mhz
d) 1120 +/- 0.6 Mhz

62.2.4.0 (4766)
The two main design functions of Secondary Surveillance Radar (SSR) Mode S are:
a) air to ground and ground to air data link communications and improved ATC aircraft surveillance capability
b) collision avoidance using TCAS II and improved long range (HF) communication capability.
c) continuous automatic position reporting using Global Positioning System (GPS) satellites and collision avoidance using TCAS II
d) the elimination of ground to air communications and the introduction of automatic separation between aircraft using TCAS II

62.2.4.0 (4767)
The ATC transponder system,excluding Mode S, contains :
a) two modes, each of 4096 codes
b) four modes, each 1024 codes
c) four modes, each 4096 codes
d) two modes, each 1024 codes

62.2.4.0 (4768)
A secondary radar can provide up to 4096 different codes.These 4096 codes can be used in:
a) all modes
b) mode A only
c) mode C only
d) mode S

62.2.4.0 (4769)
The code transmitted by a SSR transponder consists of:
a) pulses
b) phase differences
c) frequency differences
d) amplitude differences

62.2.4.0 (4770)
Which of the following Secondary Surveillance Radar (SSR) codes is used to indicate transponder malfunction?
a) 0
b) 7600
c) 4096
d) 9999

62.2.4.0 (4771)
Which one of the following Secondary Surveillance Radar (SSR) codes should be used by aircraft entering airspace from an area where SSR operation has not been required?
a) 2000
b) 5000
c) 7000
d) 0

62.2.4.0 (4772)
What is the maximum number of usable Secondary Surveillance Radar (SSR)

transponder codes?
a) 4096
b) 3600
c) 1000
d) 760

62.2.4.0 (4773)
Which of the following equipments works on the interrogator/transponder principle?
a) Secondary Surveillance Radar (SSR)
b) Global Positioning System (GPS)
c) Airborne Weather Radar (AWR)
d) Aerodrome Surface Movement Radar

62.2.4.0 (4774)
In order to indicate an emergency situation, the aircraft Secondary Surveillance Radar (SSR) transponder should be set to:
a) 7700
b) 7600
c) 7500
d) 7000

62.2.4.0 (4775)
Which one of the following switch positions should be used when selecting a code on the Transponder?
a) STBY (Standby)
b) IDENT (Identification)
c) NORMAL
d) OFF

62.2.4.0 (4776)
The selection of code 2000 on an aircraft SSR transponder indicates:
a) entry into airspace from an area where SSR operation has not been required
b) unlawful interference with the planned operation of the flight
c) an emergency
d) transponder malfunction

62.2.4.0 (4777)
The selection of code 7500 on an aircraft SSR transponder indicates:
a) unlawful interference with the planned operation of the flight
b) an emergency
c) transponder malfunction
d) radio communication failure

62.2.4.0 (4778)
The selection of code 7600 on an aircraft SSR transponder indicates:
a) radio communication failure
b) an emergency
c) unlawful interference with the planned operation of the flight
d) transponder malfunction

62.2.4.0 (4779)
The selection of code 7700 on an aircraft SSR transponder indicates:
a) an emergency
b) radio communication failure
c) transponder malfunction
d) unlawful interference with the planned operation of the flight

62.5.1.0 (4780)
ICAO Annex 11 defines Area Navigation (RNAV) as a method of navigation which permits aircraft operation on any desired flight path:
a) within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these
b) outside the coverage of station-referenced navigation aids provided that it is equipped with a minimum of one serviceable self-contained navigation aid
c) within the coverage of station-referenced navigation aids provided that it is equipped with a minimum of one serviceable self-contained navigation aid
d) outside the coverage of station-referenced navigation aids provided that it is equipped with a minimum of two serviceable self-contained navigation aids

62.5.1.0 (4781)
Precision RNAV (P-RNAV) requires a track-keeping accuracy of:
a) 0.5 NM standard deviation or better
b) 0.25 NM standard deviation or better
c) 1.0 NM standard deviation or better
d) 1.5 NM standard deviation or better

62.5.1.0 (4782)
Basic RNAV requires a track-keeping accuracy of:
a) +/- 5NM or better for 95% of the flight time
b) +/- 3NM or better for 90% of the flight time
c) +/- 2NM or better for 75% of the flight time
d) +/- 5NM or better throughout the flight

62.5.1.0 (4783)
Under JAR-25 colour code rules, features displayed in red on an Electronic Flight Instrument System (EFIS), indicate:
a) warnings, flight envelope and system limits
b) flight envelope and system limits, engaged modes
c) warnings, cautions and abnormal sources
d) cautions and abnormal sources, engaged modes

62.5.1.0 (4784)
Under JAR-25 colour code rules, features displayed in amber/yellow on an Electronic Flight Instrument System (EFIS), indicate:
a) cautions, abnormal sources
b) flight envelope and system limits
c) warnings
d) engaged modes

62.5.1.0 (4785)
Under JAR-25 colour code rules, features displayed in green on an Electronic Flight

a) 139° - 35 NM
b) 129° - 46 NM
c) 132° - 36 NM
d) 212° - 26 NM

61.3.3.0 (4355)
(For this question use annex 061-12556A)What is the radial and DME distance from SHA VOR/DME (N5243.3 W00853.1)to position N5210 W00920?
a) 214° - 37 NM
b) 354° - 34 NM
c) 198° - 37 NM
d) 346° - 34 NM

61.3.3.0 (4356)
(For this question use annex 061-12557A)What is the radial and DME distance from CON VOR/DME (N5354.8 W00849.1) to position N5430 W00900?
a) 358° - 36 NM
b) 214° - 26 NM
c) 049° - 45 NM
d) 169° - 35 NM

61.3.3.0 (4357)
(For this question use annex 061-12558A)What is the radial and DME distance from CON VOR/DME (N5354.8 W00849.1) to position N5400 W00800?
a) 088° - 29 NM
b) 320° - 8 NM
c) 094° - 64 NM
d) 260° - 30 NM

61.3.3.0 (4358)
(For this question use annex 061-12559A)What is the radial and DME distance from CON VOR/DME (N5354.8 W00849.1) to position N5340 W00820?
a) 140° - 23 NM
b) 119° - 42 NM
c) 311° - 22 NM
d) 240° - 24 NM

61.4.1.0 (4359)
Given the following:True track: 192°Magnetic variation: 7°EDrift angle: 5° leftWhat is the magnetic heading required to maintain the given track?
a) 190°
b) 194°
c) 204°
d) 180°

61.4.1.0 (4360)
Given the following:Magnetic heading: 060°Magnetic variation: 8°WDrift angle: 4° rightWhat is the true track?
a) 056°
b) 064°
c) 048°
d) 072°

61.4.1.0 (4361)
Given: True track 180°Drift 8°RCompass heading 195°Deviation -2°Calculate the variation?
a) 21°W
b) 25°W
c) 5°W
d) 9°W

61.4.1.0 (4362)
Given: True course 300°drift 8°Rvariation 10°Wdeviation -4° Calculate the compass heading?
a) 306°
b) 322°
c) 294°
d) 278°

61.4.1.0 (4363)
Given:true track 352°variation 11° Wdeviation is -5°drift 10°R.Calculate the compass heading?
a) 358°
b) 346°
c) 018°
d) 025°

61.4.1.0 (4364)
Given:true track 070°variation 30°Wdeviation +1°drift 10°RCalculate the compass heading?
a) 089°
b) 091°
c) 100°
d) 101°

61.4.1.0 (4365)
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?
a) 069° - 448 kt
b) 068° - 460 kt
c) 078° - 450 kt
d) 070° - 453 kt

61.4.1.0 (4366)
Given: True course A to B = 250°Distance A to B = 315 NMTAS = 450 kt. W/V = 200°/60kt.ETD A = 0650 UTC.What is the ETA at B?
a) 0736 UTC
b) 0730 UTC
c) 0810 UTC
d) 0716 UTC

61.4.1.0 (4367)
Given: GS = 510 kt.Distance A to B = 43 NMWhat is the time (MIN) from A to B?
a) 5
b) 4
c) 6
d) 7

61.4.1.0 (4368)
Given: GS = 122 kt.Distance from A to B = 985 NM.What is the time from A to B?
a) 8 HR 04 MIN
b) 7 HR 48 MIN
c) 7 HR 49 MIN
d) 8 HR 10 MIN

61.4.1.0 (4369)
Given: GS = 236 kt.Distance from A to B = 354 NMWhat is the time from A to B?
a) 1 HR 30 MIN
b) 1 HR 09 MIN
c) 1 HR 10 MIN
d) 1 HR 40 MIN

61.4.1.0 (4370)
Given: GS = 435 kt.Distance from A to B = 1920 NM.What is the time from A to B?
a) 4 HR 25 MIN
b) 3 HR 25 MIN
c) 3 HR 26 MIN
d) 4 HR 10 MIN

61.4.1.0 (4371)
Given: GS = 345 kt.Distance from A to B = 3560 NM.What is the time from A to B?
a) 10 HR 19 MIN
b) 10 HR 05 MIN
c) 11 HR 00 MIN
d) 11 HR 02 MIN

61.4.1.0 (4372)
Given: GS = 480 kt.Distance from A to B = 5360 NM.What is the time from A to B?
a) 11 HR 10 MIN
b) 11 HR 06 MIN
c) 11 HR 07 MIN
d) 11 HR 15 MIN

61.4.1.0 (4373)
Given: GS = 95 kt.Distance from A to B = 480 NM.What is the time from A to B?
a) 5 HR 03 MIN
b) 4 HR 59 MIN
c) 5 HR 00 MIN
d) 5 HR 08 MIN

61.4.1.0 (4374)
Given: GS = 105 kt.Distance from A to B = 103 NM.What is the time from A to B?
a) 00 HR 59 MIN
b) 00 HR 57 MIN
c) 00 HR 58 MIN
d) 01 HR 01 MIN

61.4.1.0 (4375)
Given: GS = 120 kt.Distance from A to B = 84 NM.What is the time from A to B?
a) 00 HR 42 MIN
b) 00 HR 43 MIN
c) 00 HR 44 MIN
d) 00 HR 45 MIN

61.4.1.0 (4376)
Given: GS = 135 kt.Distance from A to B = 433 NM.What is the time from A to B?
a) 3 HR 12 MIN
b) 3 HR 25 MIN
c) 3 HR 19 MIN
d) 3 HR 20 MIN

61.4.1.0 (4377)
The ICAO definition of ETA is the:
a) estimated time of arrival at destination
b) actual time of arrival at a point or fix
c) estimated time of arrival at an en-route point or fix
d) estimated time en route

61.4.1.0 (4378)
Given:Required course 045°(M),Variation is 15°E,W/V is 190°(T)/30 kt,CAS is 120 kt at FL 55 in standard atmosphere.What are the heading (°M) and GS?
a) 055° and 147 kt
b) 036° and 151 kt
c) 052° and 154 kt
d) 056° and 137 kt

61.4.1.0 (4379)
Given:Course 040°(T),TAS is 120 kt,Wind speed 30 kt.Maximum drift angle will be obtained for a wind direction of:
a) 130°
b) 145°
c) 115°
d) 120°

61.4.2.0 (4380)
How many NM would an aircraft travel in 1 MIN 45 SEC if GS is 135 kt?
a) 3.94
b) 2.36
c) 3.25
d) 39.0

61.4.2.0 (4381)
Fuel flow per HR is 22 US-GAL, total fuel on board is 83 IMP GAL.What is the endurance?
a) 4 HR 32 MIN
b) 3 HR 12 MIN
c) 3 HR 53 MIN
d) 2 HR 15 MIN

61.4.2.0 (4382)
What is the ratio between the litre and the US-GAL ?
a) 1 US-GAL equals 3.78 litres
b) 1 litre equals 3.78 US-GAL
c) 1 US-GAL equals 4.55 litres
d) 1 litre equals 4.55 US-GAL

61.4.2.0 (4383)
265 US-GAL equals? (Specific gravity 0.80)
a) 803 kg
b) 862 kg
c) 895 kg
d) 940 kg

61.4.2.0 (4384)
730 FT/MIN equals:
a) 3.7 m/sec
b) 5.2 m/sec
c) 1.6 m/sec
d) 2.2 m/sec

61.4.2.0 (4385)
How long will it take to fly 5 NM at a groundspeed of 269 Kt ?
a) 1 MIN 07 SEC
b) 1 MIN 55 SEC
c) 2 MIN 30 SEC
d) 0 MIN 34 SEC

61.4.2.0 (4386)
An aircraft travels 2.4 statute miles in 47 seconds. What is its groundspeed?
a) 160 kt
b) 183 kt
c) 209 kt
d) 131 kt

61.4.2.0 (4387)
An aircraft travels 100 statute miles in 20 MIN, how long does it take to travel 215 NM?
a) 50 MIN
b) 100 MIN
c) 90 MIN
d) 80 MIN

61.4.2.0 (4388)
The equivalent of 70 m/sec is approximately:
a) 136 kt
b) 145 kt
c) 210 kt
d) 35 kt

61.4.2.0 (4389)
Given:IAS 120 kt,FL 80,OAT +20°C. What is the TAS?
a) 141 kt
b) 102 kt
c) 120 kt
d) 132 kt

61.4.3.0 (4390)
An aircraft is following a true track of 048° at a constant TAS of 210 kt. The wind velocity is 350° / 30 kt. The GS and drift angle are:
a) 192 kt, 7° right
b) 200 kt, 3.5° right
c) 192 kt, 7° left
d) 225 kt, 7° left

61.4.3.0 (4391)
For a given track the:Wind component = +45 ktDrift angle = 15° leftTAS = 240 ktWhat is the wind component on the reverse track?
a) -65 kt
b) -55 kt
c) -45 kt
d) -35 kt

61.4.3.0 (4392)
Given:Magnetic heading = 255°VAR = 40°WGS = 375 ktW/V = 235°(T) / 120 ktCalculate the drift angle?
a) 7° left
b) 7° right
c) 9° left
d) 16° right

61.4.3.0 (4393)
Given:True Heading = 180° TAS = 500 ktW/V 225° / 100 ktCalculate the GS?
a) 435 kt
b) 600 kt
c) 535 kt
d) 450 kt

61.4.3.0 (4394)
Given:True heading = 310° TAS = 200 ktGS = 176 ktDrift angle 7° right.Calculate the W/V?
a) 270° / 33 kt
b) 360° / 33 kt

c) 090° / 33 kt
d) 180° / 33 kt

61.4.3.0 (4395)
Given:True Heading = 090° TAS = 180 ktGS = 180 ktDrift 5° rightCalculate the W/V?
a) 360° / 15 kt
b) 190° / 15 kt
c) 010° / 15 kt
d) 180° / 15 kt

61.4.3.0 (4396)
Given:True Heading = 090°TAS = 200 ktW/V = 220° / 30 kt.Calculate the GS?
a) 220 kt
b) 230 kt
c) 180 kt
d) 200 kt

61.4.3.0 (4397)
Given: M 0.80, OAT -50°C, FL 330, GS 490 kt, VAR 20°W, Magnetic heading 140°, Drift is 11° Right. Calculate the true W/V?
a) 020°/95 kt
b) 025°/47 kt
c) 200°/95 kt
d) 025°/45 kt

61.4.3.0 (4398)
Given: Compass Heading 090°, Deviation 2°W, Variation 12°E, TAS 160 kt.Whilst maintaining a radial 070° from a VOR station, the aircraft flies a ground distance of 14 NM in 6 MIN. What is the W/V °(T)?
a) 160°/50 kt
b) 340°/25 kt
c) 340°/98 kt
d) 155°/25 kt

61.4.3.0 (4399)
An aeroplane is flying at TAS 180 kt on a track of 090°. The W/V is 045° / 50kt.How far can the aeroplane fly out from its base and return in one hour?
a) 85 NM
b) 88 NM
c) 56 NM
d) 176 NM

61.4.3.0 (4400)
The following information is displayed on an Inertial Navigation System:GS 520 kt,True HDG 090°,Drift angle 5° right,TAS 480 kt.SAT (static air temperature) -51°C.The W/V being experienced is:
a) 320° / 60 kt
b) 225° / 60 kt
c) 220° / 60 kt
d) 325° / 60 kt

61.4.3.0 (4401)
The reported surface wind from the Control Tower is 240°/35 kt. Runway 30 (300°). What is the cross-wind component?
a) 30 kt
b) 24 kt
c) 27 kt
d) 21 kt

61.4.3.0 (4402)
Given:TAS = 132 kt,True HDG = 257°W/V = 095°(T)/35kt.Calculate the drift angle and GS?
a) 4°R - 165 kt
b) 2°R - 166 kt
c) 4°L - 167 kt
d) 3°L - 166 kt

61.4.3.0 (4403)
Given:TAS = 270 kt,True HDG = 270°,Actual wind 205°(T)/30kt,Calculate the drift angle and GS?
a) 6R - 259kt
b) 6L - 256kt
c) 6R - 251kt
d) 8R - 259kt

61.4.3.0 (4404)
Given:TAS = 270 kt,True HDG = 145°,Actual wind = 205°(T)/30kt.Calculate the drift angle and GS?
a) 6°L - 256 kt
b) 6°R - 251 kt
c) 8°R - 261 kt
d) 6°R - 259 kt

61.4.3.0 (4405)
Given:TAS = 470 kt,True HDG = 317°W/V = 045°(T)/45ktCalculate the drift angle and GS?
a) 5°L - 470 kt
b) 3°R - 470 kt
c) 5°L - 475 kt
d) 5°R - 475 kt

61.4.3.0 (4406)
Given:TAS = 140 kt,True HDG = 302°,W/V = 045°(T)/45ktCalculate the drift angle and GS?
a) 16°L - 156 kt
b) 9°R - 143 kt
c) 9°L - 146 kt
d) 18°R - 146 kt

61.4.3.0 (4407)
Given:TAS = 290 kt,True HDG = 171°,W/V = 310°(T)/30ktCalculate the drift angle and GS?

a) 4°L - 314 kt
b) 4°R - 310 kt
c) 4°R - 314 kt
d) 4°L - 310 kt

61.4.3.0 (4408)
Given:TAS = 485 kt,True HDG = 226°,W/V = 110°(T)/95kt.Calculate the drift angle and GS?
a) 9°R - 533 kt
b) 7°R - 531 kt
c) 9°R - 433 kt
d) 8°L - 435 kt

61.4.3.0 (4409)
Given:TAS = 235 kt,HDG (T) = 076°W/V = 040/40kt.Calculate the drift angle and GS?
a) 7R - 204 kt
b) 7L - 269 kt
c) 5L - 255 kt
d) 5R - 207 kt

61.4.3.0 (4410)
Given: TAS = 440 kt,HDG (T) = 349°W/V = 040/40kt.Calculate the drift and GS?
a) 4L - 415 kt
b) 2L - 420 kt
c) 6L - 395 kt
d) 5L - 385 kt

61.4.3.0 (4411)
Given: TAS = 465 kt,HDG (T) = 124°,W/V = 170/80kt.Calculate the drift and GS?
a) 8L - 415 kt
b) 3L - 415 kt
c) 4L - 400 kt
d) 6L - 400 kt

61.4.3.0 (4412)
Given: TAS = 95 kt,HDG (T) = 075°,W/V = 310/20kt.Calculate the drift and GS?
a) 9R - 108 kt
b) 10L - 104 kt
c) 9L - 105 kt
d) 8R - 104 kt

61.4.3.0 (4413)
Given: TAS = 140 kt,HDG (T) = 005°,W/V = 265/25kt.Calculate the drift and GS?
a) 10R - 146 kt
b) 9R - 140 kt
c) 11R - 142 kt
d) 11R - 140 kt

61.4.3.0 (4414)
Given: TAS = 190 kt,HDG (T) = 355°,W/V = 165/25kt.Calculate the drift and GS?
a) 1L - 215 kt
b) 1L - 225 kt
c) 1R - 175 kt
d) 1R - 165 kt

61.4.3.0 (4415)
Given: TAS = 230 kt,HDG (T) = 250°,W/V = 205/10kt.Calculate the drift and GS?
a) 2R - 223 kt
b) 2L - 224 kt
c) 1L - 225 kt
d) 1R - 221 kt

61.4.3.0 (4416)
Given: TAS = 205 kt,HDG (T) = 180°,W/V = 240/25kt.Calculate the drift and GS?
a) 6L - 194 kt
b) 7L - 192 kt
c) 3L - 190 kt
d) 4L - 195 kt

61.4.3.0 (4417)
Given: TAS = 250 kt,HDG (T) = 029°,W/V = 035/45kt.Calculate the drift and GS?
a) 1L - 205 kt
b) 1R - 205 kt
c) 1L - 265 kt
d) 1R - 295 kt

61.4.3.0 (4418)
Given: TAS = 132 kt,HDG (T) = 053°,W/V = 205/15kt.Calculate the Track (°T) and GS?
a) 050 - 145 kt
b) 057 - 144 kt
c) 052 - 143 kt
d) 051 - 144 kt

61.4.3.0 (4419)
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?
a) 22 kt
b) 26 kt
c) 15 kt
d) 20 kt

61.4.3.0 (4420)
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 windspeed that can be accepted without exceeding the tailwind limit?
a) 11 kt
b) 18 kt

c) 8 kt
d) 15 kt

61.4.3.0 (4421)
Given: Maximum allowable crosswind component is 20 kt. Runway 06, RWY QDM 063°(M). Wind direction 100°(M)Calculate the maximum allowable windspeed?
a) 33 kt
b) 31 kt
c) 26 kt
d) 25 kt

61.4.3.0 (4422)
Given:TAS = 472 kt,True HDG = 005°,W/V = 110°(T)/50kt.Calculate the drift angle and GS?
a) 6°L - 487 kt
b) 7°R - 491 kt
c) 7°L - 491 kt
d) 7°R - 487 kt

61.4.3.0 (4423)
Given:TAS = 190 kt,True HDG = 085°,W/V = 110°(T)/50kt.Calculate the drift angle and GS?
a) 8°L - 146 kt
b) 7°L - 156 kt
c) 4°L - 168 kt
d) 4°L - 145 kt

61.4.3.0 (4424)
Given: TAS = 220 kt,Magnetic course = 212 º, W/V 160 º(M)/ 50kt,Calculate the GS?
a) 186 kt
b) 290 kt
c) 246 kt
d) 250 kt

61.4.3.0 (4425)
Given: Magnetic track = 315 º, HDG = 301 º(M),VAR = 5ºW,TAS = 225 kt, The aircraft flies 50 NM in 12 MIN.Calculate the W/V(°T)?
a) 190 º/63 kt
b) 355 º/15 kt
c) 195 º/61 kt
d) 195 º/63 kt

61.4.3.0 (4426)
Given:TAS = 370 kt,True HDG = 181°,W/V = 095°(T)/35kt.Calculate the true track and GS?
a) 186 - 370 kt
b) 176 - 370 kt
c) 192 - 370 kt
d) 189 - 370 kt

61.4.3.0 (4427)
Given:TAS = 375 kt,True HDG = 124°,W/V = 130°(T)/55kt.Calculate the true track and GS?
a) 123 - 320 kt
b) 125 - 322 kt
c) 126 - 320 kt
d) 125 - 318 kt

61.4.3.0 (4428)
Given:TAS = 125 kt,True HDG = 355°,W/V = 320°(T)/30kt.Calculate the true track and GS?
a) 005 - 102 kt
b) 345 - 100 kt
c) 348 - 102 kt
d) 002 - 98 kt

61.4.3.0 (4429)
Given: TAS = 198 kt,HDG (°T) = 180,W/V = 359/25.Calculate the Track(°T) and GS?
a) 180 - 223 kt
b) 179 - 220 kt
c) 181 - 180 kt
d) 180 - 183 kt

61.4.3.0 (4430)
Given: TAS = 135 kt,HDG (°T) = 278,W/V = 140/20ktCalculate the Track (°T) and GS?
a) 283 - 150 kt
b) 279 - 152 kt
c) 282 - 148 kt
d) 275 - 150 kt

61.4.3.0 (4431)
Given: TAS = 225 kt,HDG (°T) = 123°,W/V = 090/60kt.Calculate the Track (°T) and GS?
a) 134 - 178 kt
b) 134 - 188 kt
c) 120 - 190 kt
d) 128 - 180 kt

61.4.3.0 (4432)
Given: TAS = 480 kt,HDG (°T) = 040°,W/V = 090/60kt.Calculate the Track (°T) and GS?
a) 034 - 445 kt
b) 028 - 415 kt
c) 032 - 425 kt
d) 036 - 435 kt

61.4.3.0 (4433)
Given: TAS = 155 kt,HDG (T) = 216°,W/V = 090/60kt.Caslculate the Track (°T) and GS?

a) 231 - 196 kt
b) 224 - 175 kt
c) 222 - 181 kt
d) 226 - 186 kt

61.4.3.0 (4434)
Given: TAS = 170 kt,HDG(T) = 100°,W/V = 350/30kt.Calculate the Track (°T) and GS?
a) 109 - 182 kt
b) 091 - 183 kt
c) 103 - 178 kt
d) 098 - 178 kt

61.4.3.0 (4435)
Given: TAS = 90 kt,HDG (T) = 355°,W/V = 120/20kt.Calculate the Track (°T) and GS?
a) 346 - 102 kt
b) 006 - 95 kt
c) 358 - 101 kt
d) 359 - 102 kt

61.4.3.0 (4436)
Given: TAS = 485 kt,HDG (T) = 168°,W/V = 130/75kt.Calculate the Track (°T) and GS?
a) 174 - 428 kt
b) 173 - 424 kt
c) 175 - 420 kt
d) 175 - 432 kt

61.4.3.0 (4437)
Given: TAS = 155 kt,Track (T) = 305°,W/V = 160/18kt.Calculate the HDG (°T) and GS?
a) 301 - 169 kt
b) 305 - 169 kt
c) 309 - 170 kt
d) 309 - 141 kt

61.4.3.0 (4438)
Given: TAS = 130 kt,Track (T) = 003°,W/V = 190/40kt.Calculate the HDG (°T) and GS?
a) 001 - 170 kt
b) 002 - 173 kt
c) 359 - 166 kt
d) 357 - 168 kt

61.4.3.0 (4439)
Given: TAS = 227 kt,Track (T) = 316°, W/V = 205/15kt.Calculate the HDG (°T) and GS?
a) 312 - 232 kt
b) 311 - 230 kt
c) 313 - 235 kt
d) 310 - 233 kt

61.4.3.0 (4440)
Given: TAS = 465 kt,Track (T) = 007°,W/V = 300/80kt.Calculate the HDG (°T) and GS?
a) 358 - 428 kt
b) 001 - 432 kt
c) 000 - 430 kt
d) 357 - 430 kt

61.4.3.0 (4441)
Given: TAS = 200 kt,Track (T) = 073°,W/V = 210/20kt.Calculate the HDG (°T) and GS?
a) 077 - 214 kt
b) 079 - 211 kt
c) 075 - 213 kt
d) 077 - 210 kt

61.4.3.0 (4442)
Given: TAS = 200 kt,Track (T) = 110°,W/V = 015/40kt.Calculate the HDG (°T) and GS?
a) 099 - 199 kt
b) 121 - 207 kt
c) 121 - 199 kt
d) 097 - 201 kt

61.4.3.0 (4443)
Given: TAS = 270 kt,Track (T) = 260°,W/V = 275/30kt.Calculate the HDG (°T) and GS?
a) 262 - 241 kt
b) 262 - 237 kt
c) 264 - 241 kt
d) 264 - 237 kt

61.4.3.0 (4444)
Given: True HDG = 307°,TAS = 230 kt,Track (T) = 313°,GS = 210 kt.Calculate the W/V?
a) 260/30kt
b) 257/35kt
c) 255/25kt
d) 265/30kt

61.4.3.0 (4445)
Given:True HDG = 233°,TAS = 480 kt,Track (T) = 240°,GS = 523 kt.Calculate the W/V?
a) 110/75kt
b) 115/70kt
c) 110/80kt
d) 105/75kt

61.4.3.0 (4446)
Given: True HDG = 133°,TAS = 225 kt,Track (T) = 144°,GS = 206 kt.Calculate the W/V?
a) 075/45kt
b) 070/40kt
c) 070/45kt
d) 075/50kt

61.4.3.0 (4447)
Given: True HDG = 074°,TAS = 230 kt,Track (T) = 066°,GS = 242 kt.Calculate the W/V?
a) 180/35kt
b) 180/30kt
c) 185/35kt
d) 180/40kt

61.4.3.0 (4448)
Given: True HDG = 206°,TAS = 140 kt,Track (T) = 207°,GS = 135 kt.Calculate the W/V?
a) 180/05kt
b) 000/05kt
c) 000/10kt
d) 180/10kt

61.4.3.0 (4449)
Given:True HDG = 054°,TAS = 450 kt,Track (T) = 059°,GS = 416 kt.Calculate the W/V?
a) 010/50kt
b) 005/50kt
c) 010/55kt
d) 010/45kt

61.4.3.0 (4450)
Given: True HDG = 145°,TAS = 240 kt,Track (T) = 150°,GS = 210 kt.Calculate the W/V?
a) 115/35kt
b) 360/35kt
c) 180/35kt
d) 295/35kt

61.4.3.0 (4451)
Given:True HDG = 002°,TAS = 130 kt,Track (T) = 353°,GS = 132 kt.Calculate the W/V?
a) 095/20kt
b) 090/15kt
c) 090/20kt
d) 095/25kt

61.4.3.0 (4452)
Given: True HDG = 035°,TAS = 245 kt,Track (T) = 046°,GS = 220 kt.Calculate the W/V?
a) 340/50kt
b) 335/45kt
c) 335/55kt
d) 340/45kt

61.4.3.0 (4453)
Given: course required = 085° (T),Forecast W/V 030/100kt,TAS = 470 kt,Distance = 265 NM.Calculate the true HDG and flight time?
a) 075°, 39 MIN
b) 076°, 34 MIN
c) 096°, 29 MIN
d) 095°, 31 MIN

61.4.3.0 (4454)
Given:Runway direction 083°(M),Surface W/V 035/35kt.Calculate the effective headwind component?
a) 24 kt
b) 27 kt
c) 31 kt
d) 34 kt

61.4.3.0 (4455)
Given:For take-off an aircraft requires a headwind component of at least 10 kt and has a cross-wind limitation of 35 kt. The angle between the wind direction and the runway is 60°, Calculate the minimum and maximum allowable wind speeds?
a) 20 kt and 40 kt
b) 12 kt and 38 kt
c) 15 kt and 43 kt
d) 18 kt and 50 kt

61.4.3.0 (4456)
Given: Runway direction 230°(T), Surface W/V 280°(T)/40 kt. Calculate the effective cross-wind component?
a) 31 kt
b) 36 kt
c) 21 kt
d) 26 kt

61.4.3.0 (4457)
Given:Runway direction 210°(M),Surface W/V 230°(M)/30kt. Calculate the cross-wind component?
a) 10 kt
b) 19 kt
c) 16 kt
d) 13 kt

61.4.3.0 (4458)
Given:Runway direction 305°(M),Surface W/V 260°(M)/30 kt. Calculate the cross-wind component?
a) 21 kt
b) 24 kt

c) 27 kt
d) 18 kt

61.4.3.0 (4459)
Given:Magnetic track = 075°,HDG = 066°(M),VAR = 11°E,TAS = 275 ktAircraft flies 48 NM in 10 MIN.Calculate the true W/V °?
a) 340°/45 kt
b) 320°/50 kt
c) 210°/15 kt
d) 180°/45 kt

61.4.3.0 (4460)
Given: Magnetic track = 210°,Magnetic HDG = 215°,VAR = 15°E,TAS = 360 kt,Aircraft flies 64 NM in 12 MIN.Calculate the true W/V?
a) 265°/50 kt
b) 195°/50 kt
c) 235°/50 kt
d) 300°/30 kt

61.4.3.0 (4461)
Given:An aircraft is on final approach to runway 32R (322°),The wind velocity reported by the tower is 350°/20 kt.,TAS on approach is 95 kt. In order to maintain the centre line, the aircraft's heading (°M) should be :
a) 328°
b) 322°
c) 316°
d) 326°

61.4.3.0 (4462)
Given:FL120, OAT is ISA standard, CAS is 200 kt,Track is 222°(M),Heading is 215° (M),Variation is 15°W.Time to fly 105 NM is 21 MIN.What is the W/V?
a) 050°(T) / 70 kt.
b) 040°(T) / 105 kt.
c) 055°(T) / 105 kt .
d) 065°(T) / 70 kt.

61.4.4.0 (4463)
A useful method of a pilot resolving, during a visual flight, any uncertainty in the aircraft's position is to maintain visual contact with the ground and:
a) set heading towards a line feature such as a coastline, motorway, river or railway
b) fly the reverse of the heading being flown prior to becoming uncertain until a pinpoint is obtained
c) fly expanding circles until a pinpoint is obtained
d) fly reverse headings and associated timings until the point of departure is regained

61.4.5.0 (4464)
An aircraft is maintaining a 5.2% gradient is at 7 NM from the runway, on a flat terrain, its height is approximately:
a) 2210 FT
b) 680 FT
c) 1890 FT
d) 3640 FT

61.4.5.0 (4465)
Given:FL 350,Mach 0.80,OAT -55°C. Calculate the values for TAS and local speed of sound (LSS)?
a) 461 kt , LSS 576 kt
b) 237 kt, LSS 296 kt
c) 490 kt, LSS 461 kt
d) 461 kt , LSS 296 kt

61.4.5.0 (4466)
Given: Pressure Altitude 29000 FT, OAT -55°C. Calculate the Density Altitude?
a) 27500 FT
b) 31000 FT
c) 33500 FT
d) 26000 FT

61.4.5.0 (4467)
Given:TAS = 485 kt,OAT = ISA +10°C,FL 410.Calculate the Mach Number?
a) 0.825
b) 0.90
c) 0.85
d) 0.87

61.4.5.0 (4468)
What is the ISA temperature value at FL 330?
a) -50°C
b) -56°C
c) -66°C
d) -81°C

61.4.5.0 (4469)
Given: TAS 487kt, FL 330, Temperature ISA + 15. Calculate the MACH Number?
a) 0.81
b) 0.84
c) 0.76
d) 0.78

61.4.5.0 (4470)
Given: FL250, OAT -15 ºC, TAS 250 kt.Calculate the Mach No.?
a) 0.40
b) 0.42
c) 0.44
d) 0.39

61.4.5.0 (4471)
Given:Airport elevation is 1000 ft. QNH is 988 hPa.What is the approximate airport pressure altitude?(Assume 1 hPa = 27 FT)
a) 1680 FT

b) 320 FT
c) 680 FT
d) - 320 FT

61.4.5.0 (4472)
Given :True altitude 9000 FT,OAT -32°C,CAS 200 kt.What is the TAS?
a) 220 kt
b) 215 kt
c) 200 kt
d) 210 kt

61.4.5.0 (4473)
Given:Aircraft at FL 150 overhead an airportElevation of airport 720 FT.QNH is 1003 hPa.OAT at FL150 -5°C.What is the true altitude of the aircraft?(Assume 1 hPa = 27 FT)
a) 15 280 FT
b) 15 840 FT
c) 14 160 FT
d) 14 720 FT

61.4.5.0 (4474)
An aircraft takes off from the aerodrome of BRIOUDE (altitude 1 483 FT, QFE = 963 hPa, temperature = 32°C).Five minutes later, passing 5 000 FT on QFE, the second altimeter set on 1 013 hPa will indicate approximately :
a) 6 400 FT
b) 6 800 FT
c) 6 000 FT
d) 4 000 FT

61.4.6.0 (4475)
(For this question use annex 061-1818A)Assume a North polar stereographic chart whose grid is aligned with the Greenwich meridian.An aircraft flies from the geographic North pole for a distance of 480 NM along the 110°E meridian, then follows a grid track of 154° for a distance of 300 NM.Its position is now approximately:
a) 80°00'N 080°E
b) 78°45'N 087°E
c) 79°15'N 074°E
d) 70°15'N 080°E

61.4.6.0 (4476)
Given:A polar stereographic chart whose grid is aligned with the zero meridian. Grid track 344°, Longitude 115°00'W,Calculate the true course?
a) 229°
b) 099°
c) 279°
d) 049°

61.4.6.0 (4477)
(For this question use annex 061-1828A and the data for 1215 UTC)1215 UTC LAJES VORTAC (38°46'N 027°05'W) RMI reads 178°, range 135 NM.Calculate the aircraft position at 1215 UTC?
a) 40°55'N 027°55'W
b) 40°50'N 027°40'W
c) 41°00'N 028°10'W
d) 41°05'N 027°50'W

61.4.6.0 (4478)
(For this question use annex 061-1829A and the data for 1300 UTC)1300 UTC DR position 37°30'N 021°30'W alter heading PORT SANTO NDB (33°03'N 016°23'W) TAS 450 kt,Forecast W/V 360°/30kt.Calculate the ETA at PORT SANTO NDB?
a) 1348
b) 1344
c) 1341
d) 1354

61.4.7.0 (4479)
For a distance of 1860 NM between Q and R, a ground speed ""out"" of 385 kt, a ground speed ""back"" of 465 kt and an endurance of 8 HR (excluding reserves) the distance from Q to the point of safe return (PSR) is:
a) 1685 NM
b) 1532 NM
c) 930 NM
d) 1865 NM

61.4.7.0 (4480)
Two points A and B are 1000 NM apart. TAS = 490 kt.On the flight between A and B the equivalent headwind is -20 kt.On the return leg between B and A, the equivalent headwind is +40 kt.What distance from A, along the route A to B, is the the Point of Equal Time (PET)?
a) 530 NM
b) 470 NM
c) 455 NM
d) 500 NM

61.4.7.0 (4481)
Given:AD = Air distance GD = Ground distanceTAS = True AirspeedGS = GroundspeedWhich of the following is the correct formula to calculate ground distance (GD) gone?
a) GD = (AD X GS)/TAS
b) GD = (AD - TAS)/TAS
c) GD = AD X (GS -TAS)/GS
d) GD = TAS/(GS X AD)

61.4.7.0 (4482)
An aircraft was over 'A' at 1435 hours flying direct to 'B'.Given:Distance 'A' to 'B' 2900 NMTrue airspeed 470 ktMean wind component 'out' +55 ktMean wind component 'back' -75 ktThe ETA for reaching the Point of Equal Time (PET) between 'A' and 'B' is:
a) 1657
b) 1744

c) 1846
d) 1721

61.4.7.0 (4483)
An aircraft was over 'A' at 1435 hours flying direct to 'B'.Given:Distance 'A' to 'B' 2900 NMTrue airspeed 470 ktMean wind component 'out' +55 ktMean wind component 'back' -75 ktSafe endurance 9 HR 30 MIN The distance from 'A' to the Point of Safe Return (PSR) 'A' is:
a) 2141 NM
b) 1611 NM
c) 1759 NM
d) 2844 NM

61.4.7.0 (4484)
Given:Distance 'A' to 'B' 2484 NMGroundspeed 'out' 420 ktGroundspeed 'back' 500 ktThe time from 'A' to the Point of Equal Time (PET) between 'A' and 'B' is:
a) 193 MIN
b) 163 MIN
c) 173 MIN
d) 183 MIN

61.4.7.0 (4485)
Given:Distance 'A' to 'B' 2484 NMMean groundspeed 'out' 420 ktMean groundspeed 'back' 500 ktSafe endurance 08 HR 30 MIN The distance from 'A' to the Point of Safe Return (PSR) 'A' is:
a) 1940 NM
b) 1908 NM
c) 1736 NM
d) 1630 NM

61.4.7.0 (4486)
An aircraft was over 'Q' at 1320 hours flying direct to 'R'.Given:Distance 'Q' to 'R' 3016 NMTrue airspeed 480 ktMean wind component 'out' -90 ktMean wind component 'back' +75 ktThe ETA for reaching the Point of Equal Time (PET) between 'Q' and 'R' is:
a) 1752
b) 1756
c) 1820
d) 1742

61.4.7.0 (4487)
An aircraft was over 'Q' at 1320 hours flying direct to 'R'.Given:Distance 'Q' to 'R' 3016 NMTrue airspeed 480 ktMean wind component 'out' -90 ktMean wind component 'back' +75 ktSafe endurance 10:00 HR The distance from 'Q' to the Point of Safe Return (PSR) 'Q' is:
a) 2290 NM
b) 2370 NM
c) 1310 NM
d) 1510 NM

61.4.7.0 (4488)
Given:Distance 'A' to 'B' 1973 NMGroundspeed 'out' 430 ktGroundspeed 'back' 385 ktThe time from 'A' to the Point of Equal Time (PET) between 'A' and 'B' is:
a) 130 MIN
b) 145 MIN
c) 162 MIN
d) 181 MIN

61.4.7.0 (4489)
Given:Distance 'A' to 'B' 1973 NMGroundspeed 'out' 430 ktGroundspeed 'back' 385 ktSafe endurance 7 HR 20 MIN The distance from 'A' to the Point of Safe Return (PSR) 'A' is:
a) 1490 NM
b) 1664 NM
c) 1698 NM
d) 1422 NM

61.4.7.0 (4490)
Given:Distance 'A' to 'B' 2346 NMGroundspeed 'out' 365 ktGroundspeed 'back' 480 ktThe time from 'A' to the Point of Equal Time (PET) between 'A' and 'B' is:
a) 219 MIN
b) 290 MIN
c) 197 MIN
d) 167 MIN

61.4.7.0 (4491)
Given:Distance 'A' to 'B' 2346 NMGroundspeed 'out' 365 ktGroundspeed 'back' 480 ktSafe endurance 8 HR 30 MIN The time from 'A' to the Point of Safe Return (PSR) 'A' is:
a) 290 MIN
b) 219 MIN
c) 197 MIN
d) 209 MIN

61.4.7.0 (4492)
Given:Distance 'Q' to 'R' 1760 NMGroundspeed 'out' 435 ktGroundspeed 'back' 385 ktThe time from 'Q' to the Point of Equal Time (PET) between 'Q' and 'R' is:
a) 114 MIN
b) 110 MIN
c) 106 MIN
d) 102 MIN

61.4.7.0 (4493)
Given:Distance 'Q' to 'R' 1760 NMGroundspeed 'out' 435 ktGroundspeed 'back' 385 ktSafe endurance 9 HR The distance from 'Q' to the Point of Safe Return (PSR) between 'Q' and 'R' is:
a) 1838 NM
b) 1313 NM
c) 1467 NM
d) 1642 NM

61.4.7.0 (4494)
Given:Distance 'A' to 'B' 3623 NMGroundspeed 'out' 370 ktGroundspeed 'back' 300 ktThe time from 'A' to the Point of Equal Time (PET) between 'A' and 'B' is:
a) 263 MIN
b) 288 MIN
c) 323 MIN
d) 238 MIN

61.4.7.0 (4495)
An aircraft takes-off from an airport 2 hours before sunset. The pilot flies a track of 090°(T), W/V 130°/ 20 kt, TAS 100 kt. In order to return to the point of departure before sunset, the furthest distance which may be travelled is:
a) 97 NM
b) 115 NM
c) 105 NM
d) 84 NM

61.4.7.0 (4496)
From the departure point, the distance to the point of equal time is :
a) inversely proportional to the sum of ground speed out and ground speed back
b) proportional to the sum of ground speed out and ground speed back
c) inversely proportional to the total distance to go
d) inversely proportional to ground speed back

61.4.7.0 (4497)
Given:Distance A to B is 360 NM. Wind component A - B is -15 kt,Wind component B - A is +15 kt,TAS is 180 kt.What is the distance from the equal-time-point to B?
a) 165 NM
b) 195 NM
c) 180 NM
d) 170 NM

61.5.1.0 (4498)
A ground feature appears 30° to the left of the centre line of the CRT of an airborne weather radar. If the heading of the aircraft is 355° (M) and the magnetic variation is 15° East, the true bearing of the aircraft from the feature is:
a) 160°
b) 220°
c) 310°
d) 130°

61.5.1.0 (4499)
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:
a) groundspeed
b) position
c) track
d) drift

61.5.1.0 (4500)
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?
a) 054°
b) 318°
c) 234°
d) 038°

61.5.1.0 (4501)
A ground feature was observed on a relative bearing of 325° and five minutes later on a relative bearing of 280°. The aircraft heading was 165°(M), variation 25°W, drift 10°Right and GS 360 kt. When the relative bearing was 280°, the distance and true bearing of the aircraft from the feature was:
a) 30 NM and 240°
b) 40 NM and 110°
c) 40 NM and 290°
d) 30 NM and 060°

61.5.1.0 (4502)
An island is observed by weather radar to be 15° to the left. The aircraft heading is 120°(M) and the magnetic variation 17°W. What is the true bearing of the aircraft from the island?
a) 268°
b) 302°
c) 088°
d) 122°

61.5.1.0 (4503)
A ground feature was observed on a relative bearing of 315° and 3 MIN later on a relative bearing of 270°. The W/V is calm, aircraft GS 180 kt.What is the minimum distance between the aircraft and the ground feature?
a) 9 NM
b) 12 NM
c) 3 NM
d) 6 NM

61.5.1.0 (4504)
An island is observed to be 15° to the left.The aircraft heading is 120°(M), variation 17°(W).The bearing °(T) from the aircraft to the island is:
a) 88
b) 122
c) 268
d) 302

61.5.1.0 (4505)
An island appears 60° 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 (MH) of 276° with the magnetic variation (VAR) 10°E?
a) 046°
b) 086°

c) 226°
d) 026°

61.5.1.0 (4506)
An island appears 45° to the right 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 (MH) of 215° with the magnetic variation (VAR) 21°W?
a) 059°
b) 101°
c) 239°
d) 329°

61.5.1.0 (4507)
An island appears 30° to the right 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 (MH) of 355° with the magnetic variation (VAR) 15°E?
a) 220°
b) 130°
c) 160°
d) 190°

61.5.1.0 (4508)
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 (MH) of 020° with the magnetic variation (VAR) 25°W?
a) 145°
b) 195°
c) 205°
d) 325°

61.5.2.0 (4509)
An aircraft is descending down a 12% slope whilst maintaining a GS of 540 kt.The rate of descent of the aircraft is approximately:
a) 6500 FT/MIN
b) 650 FT/MIN
c) 4500 FT/MIN
d) 3900 FT/MIN

61.5.2.0 (4510)
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?
a) 26.7 NM
b) 19.2 NM
c) 38.4 NM
d) 16.0 NM

61.5.2.0 (4511)
An aircraft at FL370 is required to commence descent at 120 NM from a VOR and to cross the facility at FL130. If the mean GS for the descent is 288 kt, the minimum rate of descent required is:
a) 960 FT/MIN
b) 860 FT/MIN
c) 890 FT/MIN
d) 920 FT/MIN

61.5.2.0 (4512)
An aircraft at FL350 is required to descend to cross a DME facility at FL80. Maximum rate of descent is 1800 FT/MIN and mean GS for descent is 276 kt. The minimum range from the DME at which descent should start is:
a) 69 NM
b) 79 NM
c) 49 NM
d) 59 NM

61.5.2.0 (4513)
An aircraft at FL350 is required to cross a VOR/DME facility at FL110 and to commence descent when 100 NM from the facility. If the mean GS for the descent is 335 kt, the minimum rate of descent required is:
a) 1340 FT/MIN
b) 1390 FT/MIN
c) 1240 FT/MIN
d) 1290 FT/MIN

61.5.2.0 (4514)
An aircraft at FL390 is required to descend to cross a DME facility at FL70. Maximum rate of descent is 2500 FT/MIN, mean GS during descent is 248 kt. What is the minimum range from the DME at which descent should commence?
a) 53 NM
b) 58 NM
c) 63 NM
d) 68 NM

61.5.2.0 (4515)
An aircraft at FL370 is required to commence descent when 100 NM from a DME facility and to cross the station at FL120. If the mean GS during the descent is 396 kt, the minimum rate of descent required is approximately:
a) 1650 FT/MIN
b) 2400 FT/MIN
c) 1000 FT/MIN
d) 1550 FT/MIN

61.5.2.0 (4516)
At 0422 an aircraft at FL370, GS 320kt, is on the direct track to VOR 'X' 185 NM distant. The aircraft is required to cross VOR 'X' at FL80. For a mean rate of descent of 1800 FT/MIN at a mean GS of 232 kt, the latest time at which to commence descent is:
a) 445
b) 448

c) 451
d) 454

61.5.2.0 (4517)
An aircraft at FL330 is rerquired to commence descent when 65 NM from a VOR and to cross the VOR at FL100. The mean GS during the descent is 330 kt. What is the minimum rate of descent required?
a) 1950 FT/MIN
b) 1650 FT/MIN
c) 1750 FT/MIN
d) 1850 FT/MIN

61.5.2.0 (4518)
An aircraft at FL290 is required to commence descent when 50 NM from a VOR and to cross that VOR at FL80. Mean GS during descent is 271kt. What is the minimum rate of descent required?
a) 1900 FT/MIN
b) 2000 FT/MIN
c) 1700 FT/MIN
d) 1800 FT/MIN

61.5.2.0 (4519)
An aircraft at FL350 is required to commence descent when 85 NM from a VOR and to cross the VOR at FL80. The mean GS for the descent is 340 kt. What is the minimum rate of descent required?
a) 1800 FT/MIN
b) 1900 FT/MIN
c) 1600 FT/MIN
d) 1700 FT/MIN

61.5.2.0 (4520)
What is the effect on the Mach number and TAS in an aircraft that is climbing with constant CAS?
a) Mach number increases, TAS increases
b) Mach number remains constant, TAS increases
c) Mach number decreases, TAS decreases
d) Mach number increases, TAS remains constant

61.5.2.0 (4521)
Given:TAS = 197 kt, True course = 240°,W/V = 180/30kt. Descent is initiated at FL 220 and completed at FL 40. Distance to be covered during descent is 39 NM.What is the approximate rate of descent?
a) 1400 FT/MIN
b) 800 FT/MIN
c) 950 FT/MIN
d) 1500 FT/MIN

61.5.2.0 (4522)
Given:ILS GP angle = 3.5 DEG,GS = 150 kt.What is the approximate rate of descent?
a) 900 FT/MIN
b) 1000 FT/MIN
c) 700 FT/MIN
d) 800 FT/MIN

61.5.2.0 (4523)
Given:aircraft height 2500 FT,ILS GP angle 3°.At what approximate distance from THR can you expect to capture the GP?
a) 8.3 NM
b) 7.0 NM
c) 13.1 NM
d) 14.5 NM

61.5.3.0 (4524)
A pilot receives the following signals from a VOR DME station: radial 180°+/- 1°, distance = 200 NM. What is the approximate error?
a) +/- 3.5 NM
b) +/- 1 NM
c) +/- 2 NM
d) +/- 7 NM

61.5.3.0 (4525)
An aircraft at FL310, M0.83, temperature -30°C, is required to reduce speed in order to cross a reporting point five minutes later than planned. Assuming that a zero wind component remains unchanged, when 360 NM from the reporting point Mach Number should be reduced to:
a) M0.74
b) M0.76
c) M0.78
d) M0.80

61.5.3.0 (4526)
An aircraft at FL120, IAS 200kt, OAT -5° and wind component +30kt, is required to reduce speed in order to cross a reporting point 5 MIN later than planned. Assuming flight conditions do not change, when 100 NM from the reporting point IAS should be reduced to:
a) 159 kt
b) 165 kt
c) 169 kt
d) 174 kt

61.5.3.0 (4527)
An aircraft at FL370, M0.86, OAT -44°C, headwind component 110 kt, is required to reduce speed in order to cross a reporting point 5 MIN later than planned. If the speed reduction were to be made 420 NM from the reporting point, what Mach Number is required?
a) M0.81
b) M0.73
c) M0.75
d) M0.79

61.5.3.0 (4528)
An aircraft at FL140, IAS 210 kt, OAT -5°C and wind component minus 35 kt, is required to reduce speed in order to cross a reporting point 5 MIN later than planned. Assuming that flight conditions do not change, when 150 NM from the reporting point the IAS should be reduced by:
a) 20 kt
b) 25 kt
c) 30 kt
d) 15 kt

61.5.3.0 (4529)
An aircraft obtains a relative bearing of 315° from an NDB at 0830. At 0840 the relative bearing from the same position is 270°. Assuming no drift and a GS of 240 kt, what is the approximate range from the NDB at 0840?
a) 40 NM
b) 50 NM
c) 60 NM
d) 30 NM

61.5.3.0 (4530)
The distance between positions A and B is 180 NM. An aircraft departs position A and after having travelled 60 NM, its position is pinpointed 4 NM left of the intended track. Assuming no change in wind velocity, what alteration of heading must be made in order to arrive at position B?
a) 6° Right
b) 8° Right
c) 2° Left
d) 4° Right

61.5.3.0 (4531)
Given:Distance A to B = 120 NM,After 30 NM aircraft is 3 NM to the left of course.What heading alteration should be made in order to arrive at point 'B'?
a) 8° right
b) 6° right
c) 4° right
d) 8° left

61.5.3.0 (4532)
An aircraft is planned to fly from position 'A' to position 'B',distance 480 NM at an average GS of 240 kt. It departs 'A' at 1000 UTC.After flying 150 NM along track from 'A', the aircraft is 2 MIN behind planned time.Using the actual GS experienced, what is the revised ETA at 'B'?
a) 1206
b) 1203
c) 1153
d) 1157

61.5.3.0 (4533)
An aircraft is planned to fly from position 'A' to position 'B',distance 320 NM, at an average GS of 180 kt. It departs 'A' at 1200 UTC.After flying 70 NM along track from 'A', the aircraft is 3 MIN ahead of planned time.Using the actual GS experienced, what is the revised ETA at 'B'?
a) 1333 UTC
b) 1401 UTC
c) 1347 UTC
d) 1340 UTC

61.5.3.0 (4534)
An aircraft is planned to fly from position 'A' to position 'B',distance 250 NM at an average GS of 115 kt. It departs 'A' at 0900 UTC.After flying 75 NM along track from 'A', the aircraft is 1.5 MIN behind planned time.Using the actual GS experienced, what is the revised ETA at 'B'?
a) 1115 UTC
b) 1110 UTC
c) 1044 UTC
d) 1050 UTC

61.5.3.0 (4535)
Given: Distance 'A' to 'B' is 475 NM,Planned GS 315 kt,ATD 1000 UTC,1040 UTC - fix obtained 190 NM along track.What GS must be maintained from the fix in order to achieve planned ETA at 'B'?
a) 340 kt
b) 360 kt.
c) 300 kt
d) 320 kt.

61.5.3.0 (4536)
Given: Distance 'A' to 'B' is 325 NM,Planned GS 315 kt,ATD 1130 UTC,1205 UTC - fix obtained 165 NM along track.What GS must be maintained from the fix in order to achieve planned ETA at 'B'?
a) 355 kt
b) 375 kt
c) 395 kt
d) 335 kt

61.5.3.0 (4537)
Given: Distance 'A' to 'B' is 100 NM,Fix obtained 40 NM along and 6 NM to the left of course.What heading alteration must be made to reach 'B'?
a) 15° Right
b) 9° Right
c) 6° Right
d) 18° Right

61.5.3.0 (4538)
Given: Distance 'A' to 'B' is 90 NM,Fix obtained 60 NM along and 4 NM to the right of course.What heading alteration must be made to reach 'B'?
a) 12° Left
b) 16° Left
c) 4° Left
d) 8° Left

61.5.3.0 (4539)
Given :ETA to cross a meridian is 2100 UTCGS is 441 kt TAS is 491 kt At 2010 UTC, ATC requests a speed reduction to cross the meridian at 2105 UTC.The reduction to TAS will be approximately:
a) 40 kt
b) 90 kt
c) 75 kt
d) 60 kt

61.5.3.0 (4540)
The distance between two waypoints is 200 NM,To calculate compass heading, the pilot used 2°E magnetic variation instead of 2°W.Assuming that the forecast W/V applied, what will the off track distance be at the second waypoint?
a) 14 NM
b) 7 NM
c) 0 NM
d) 21 NM

61.5.3.0 (4541)
Given:Half way between two reporting points the navigation log gives the following information:TAS 360 kt, W/V 330°/80kt, Compass heading 237°, Deviation on this heading -5°, Variation 19°W.What is the average ground speed for this leg?
a) 403 kt
b) 354 kt
c) 373 kt
d) 360 kt

61.5.4.0 (4542)
(For this question use annex 061-9437A) Complete line 1 of the 'FLIGHT NAVIGATION LOG', positions 'A' to 'B'.What is the HDG°(M) and ETA?
a) 268° - 1114 UTC
b) 282° - 1128 UTC
c) 282° - 1114 UTC
d) 268° - 1128 UTC

61.5.4.0 (4543)
(For this question use annex 061-9438A)Complete line 2 of the 'FLIGHT NAVIGATION LOG', positions 'C' to 'D'.What is the HDG°(M) and ETA?
a) HDG 193° - ETA 1239 UTC
b) HDG 188° - ETA 1229 UTC
c) HDG 193° - ETA 1249 UTC
d) HDG 183° - ETA 1159 UTC

61.5.4.0 (4544)
(For this question use annex 061-9439A)Complete line 3 of the 'FLIGHT NAVIGATION LOG', positions 'E' to 'F'.What is the HDG°(M) and ETA?
a) HDG 105° - ETA 1205 UTC
b) HDG 095° - ETA 1155 UTC
c) HDG 106° - ETA 1215 UTC
d) HDG 115° - ETA 1145 UTC

61.5.4.0 (4545)
(For this question use annex 061-9440A)Complete line 4 of the 'FLIGHT NAVIGATION LOG', positions 'G' to 'H'.What is the HDG°(M) and ETA?
a) HDG 344° - ETA 1336 UTC
b) HDG 354° - ETA 1326 UTC
c) HDG 034° - ETA 1336 UTC
d) HDG 344° - ETA 1303 UTC

61.5.4.0 (4546)
(For this question use annex 061-9441A)Complete line 5 of the 'FLIGHT NAVIGATION LOG', positions 'J' to 'K'.What is the HDG°(M) and ETA?
a) HDG 337° - ETA 1422 UTC
b) HDG 320° - ETA 1412 UTC
c) HDG 337° - ETA 1322 UTC
d) HDG 320° - ETA 1432 UTC

61.5.4.0 (4547)
(For this question use annex 061-9442A)Complete line 6 of the 'FLIGHT NAVIGATION LOG', positions 'L' to 'M'.What is the HDG°(M) and ETA?
a) HDG 075° - ETA 1502 UTC
b) HDG 064° - ETA 1449 UTC
c) HDG 075° - ETA 1452 UTC
d) HDG 070° - ETA 1459 UTC

61.5.4.0 (4548)
The flight log gives the following data :""True track, Drift, True heading, Magnetic variation, Magnetic heading, Compass deviation, Compass heading""The right solution, in the same order, is :
a) 119°, 3°L, 122°, 2°E, 120°, +4°, 116°
b) 115°, 5°R, 120°, 3°W, 123°, +2°, 121°
c) 117°, 4°L, 121°, 1°E, 122°, -3°, 119°
d) 125°, 2°R, 123°, 2°W, 121°, -4°, 117°

61.5.4.0 (4549)
(For this question use appendix)Given:TAS is120 kt. ATA 'X' 1232 UTC,ETA 'Y' 1247 UTC,ATA 'Y' is 1250 UTC. What is ETA 'Z'?
a) 1302 UTC
b) 1257 UTC
c) 1300 UTC
d) 1303 UTC

61.5.5.0 (4550)
The purpose of the Flight Management System (FMS), as for example installed in the B737-400, is to provide:
a) continuous automatic navigation guidance and performance management
b) manual navigation guidance and automatic performance management
c) continuous automatic navigation guidance as well as manual performance management
d) both manual navigation guidance and performance management

61.5.5.0 (4551)
Which component of the B737-400 Flight Management System (FMS) is used to