061 – GENERAL NAVIGATION

061-01 BASICS OF NAVIGATION

061-01-01 The Solar System

8260. What is the highest latitude listed below at which the sun will reach an altitude of 90º above the horizon at some time during the year?

A – 0º
B – 45º
C – 66º
D – 23º

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8267. Assuming mid-latitudes (40o to 50o 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 – Summer solstice and spring equinox
B – Spring equinox and autumn equinox
C – Summer solstice and winter solstice
D – Winter solstice and autumn equinox

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8280. What is the approximate date of perihelion, when the Earth is nearest to the Sun?

A – Beginning of January
B – End of December
C – Beginning of July
D – End of March

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8334. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8335. Seasons are due to the:

A – Earth's elliptical orbit around the Sun
B – inclination of the polar axis with the ecliptic plane
C – Earth's rotation on its polar axis
D – variable distance between Earth and Sun

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

061-01-02 The Earth

8261. 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°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8264. The angle between the plane of the Equator and the plane of the Ecliptic is:

A – 66.5 deg
B – 23.5 deg
C – 25.3 deg
D – 65.6 deg

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8282. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8309. 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°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8312. The maximum difference between geocentric and geodetic latitude occurs at about:

A – 90° North and South
B – 60° North and South
C – 45° North and South
D – 0° North and South (equator)

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8313. What is the UTC time of sunrise in Vancouver, British Columbia, Canada (49N 123 30W) on the 6th December?

A – 2324 UTC
B – 0724 UTC
C – 1552 UTC
D – 0738 UTC

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8316. The circumference of the Earth is approximately:

A – 43200 nm
B – 10800 nm
C – 21600 nm
D – 5400 nm

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8331. In order to fly from position A (10º00N, 030º00W) to position B (30º00N), 050º00W), maintaining a constant true course, it is necessary to fly:

A – the great-circle route
B – the constant average drift route
C – a rhumb line track
D – a straight line plotted on a Lambert chart

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8332. The diameter of the Earth is approximately:

A – 18 500 km
B – 6 350 km
C – 12 700 km
D – 40 000 km

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

9738. At what approximate date is the earth closest to the sun (perihelion)?

A – End of June
B – End of March
C – Beginning of July
D – Beginning of January

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

9754. 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 – March and September
B – February and November
C – June and December
D – April and August

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

9770. What is a line of equal magnetic variation?

A – An isocline
B – An isogonal
C – An isogriv
D – An isovar

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

9778. The circumference of the parallel of latitude at 60ºN is approximately:

A – 10 800 NM
B – 18 706 NM
C – 20 000 NM
D – 34 641 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

9804. Parallels of latitude, except the equator are:

A – both Rhumb lines and Great circles
B – Great circles
C – Rhumb lines
D – are neither Rhumb lines nor Great circles

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

9818. The angle between the plane of the ecliptic and the plane of equator is approximately:

A – 27.5°
B – 25.3°
C – 23.5°
D – 66.5°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

10899. Given:
The coordinates of the heliport at Issy les Moulineaux are:
N48°50 E002°16.5
The coordinates of the antipodes are:

A – S41°10 W177°43.5
B – S48°50 E177°43.5
C – S48°50 W177°43.5
D – S41°10 E177°43.5

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

10901. An aircraft at latitude 02°20N tracks 180°(T) for 685 km. On completion of the flight the latitude will be:

A – 03°50S
B – 04°10S
C – 04°30S
D – 09°05S

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

10919. An aircraft departing A(N40° 00'E080°00') flies a constant true track of 270° at a ground speed of 120 kt. What are the coordinates of the position reached in 6 HR?

A – N40° 00' E068° 10'
B – N40° 00' E064° 20'
C – N40° 00' E070° 30'
D – N40° 00' E060° 00'

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

10937. If an aeroplane was to circle around the Earth following parallel 60oN 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 – 550 kt
B – 240 kt
C – 960 kt
D – 480 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

10947. 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°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

10954. An aircraft flies the following rhumb line tracks and distances from position 04°00N 030°00W: 600 NM South, then 600 NM East, then 600 NM North, then 600 NM West. The final position of the aircraft is:

A – 04°00N 029°58W
B – 04°00N 030°02W
C – 04°00N 030°00W
D – 03°58N 030°02W

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

15451. Which of the following statements concerning the earth's magnetic field is completely correct?

A – Dip is the angle between total magnetic field and vertical field component
B – The blue pole of the earth's magnetic field is situated in North Canada
C – At the earth's magnetic equator, the inclination varies depending on whether the geographic equator is north or south of the magnetic equator
D – The earth's magnetic field can be classified as transient semi-permanent or permanent

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

16272. What is the initial great circle direction from 45°N 14°12W to 45°N 12°48E?

A – 86.5° (T)
B – 80.4° (T)
C – 090° (M)
D – 270° (M)

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

16276. You are flying from A (50n 10W) to B (58N 02E). What is the Convergency between A and B?

A – 6.5°
B – 9.7°
C – 10.2°
D – 6.8°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

16286. Radio bearings:

A – are Rhumb lines
B – cut all meridians at the same angle
C – are Great circles
D – are lines of fixed direction

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

16290. How many nm are equivalent to 1° of arc of latitude:

A – 1 nm
B – 15 nm
C – 60 nm
D – 600 nm

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

16310. The earth may be referred to as:

A – round
B – an oblate spheroid
C – a globe
D – elliptical

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

16317. What is the standard formula for convergency?

A – Convergency = dial x sin mean latitude
B – Convergency = dial x cos mean latitude
C – Convergency – diong x cos mean latitude
D – Convergency = diong x sin mean latitude

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

16318. A line which cuts all meridians at the same angle is called a:

A – Line of variation
B – Great circle
C – Rhumb line
D – Agonic line

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

16319. A Parallel of Latitude is a:

A – Great circle
B – Rhumb line
C – Small circle
D – Meridian of tangency

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

16320. The shortest distance between 2 point of the surface of the earth is:

A – a great circle
B – the arc of a great circle
C – half the rhumb line distance
D – Rhumb line

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

16321. Conversion angle is:

A – convergency
B – 4 times convergency
C – twice convergency
D - 0.5 convergency

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

16322. Generally what line lies closer to the pole?

A – Rhumb line
B – Orthodromic line
C – Equator
D – The rhumb line or great circle depending on the chart used

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

25148. The Earth is:

A – A sphere which has a larger polar circumference than equatorial circumference
B – A sphere whose centre is equidistant (the same distance) from the Poles and the Equator
C – Considered to be a perfect sphere as far as navigation is concerned
D – None of the above statements is correct

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25187. At what time of the year is the Earth at its furthest point from the sun (aphelion)?

A – Early July
B – Late December
C – Early January
D – Mid-June

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

061-01-03 Time and time conversions

8254. (Refer to figure 061-14)

When it is 1000 Standard Time in Kuwait, the Standard time in Algeria :

A – 0700
B – 1200
C – 1300
D – 0800

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8272. The duration of civil twilight is the time:

A – between sunset and when the centre of the sun is 12° 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 6° below the true horizon

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8285. (Refer to figures 061-13 and 061-15)

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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8693. What is the definition of EAT?

A – Estimated on-blocks arrival time
B – Estimated time overhead the destination airfield
C - Estimated initial approach fix time
D – Estimated final approach fix time

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

9731. In which months is the difference between apparent noon and mean noon the greatest?

A – November and February
B – January and July
C – March and September
D – June and December

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

9753. Civil Twilight occurs between:

A – sunset and 6 deg below the horizon
B – 6 deg and 12 deg below the horizon
C – 12 deg and 18 deg below the horizon
D – sunrise and sunset

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

9758. Which is the highest latitude listed below at which the sun will rise above the horizon and set every day?

A – 62°
B – 68°
C – 72°
D – 66°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

9774. On the 27th of February, at 52oS and 040oE, the sunrise is at 0243 UTC. On the same day, at 52oS and 035oW, the sunrise is at:

A – 2143 UTC
B – 0243 UTC
C – 0743 UTC
D – 0523 UTC

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

9785. (Refer to figures 061-13 and 061-15)

At 1200 Standard Time on the 10th of July in Queensland, Australia, what is the Standard Time in Hawaii, USA?

A – 1200 ST 10 July
B – 1000 ST 10 July
C – 1600 ST 09 July
D – 0200 ST 10 July

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

10935. What is the local mean time, position 65°25N 123°45W at 2200 UTC?

A – 1345
B – 2200
C – 0615
D – 0815

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

10946. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

15420. The Local Mean Time at longitude 095°20W at 0000 UTC, is:

A – 1738:40 same day
B – 0621:20 same day
C – 1738:40 previous day
D – 0621:20 previous day

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

15423. What is the meaning of the term standard time?

A – It is the time zone system applicable only in the USA
B – It is an expression for local mean time
C – It is another term for UTC
D – It is the time set by the legal authorities for a country or part of a country

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

15453. Civil twilight is defined by:

A – sun altitude is 12^{o} below the celestial horizon
B – sun altitude is 18^{o} below the celestial horizon
C – sun upper edge tangential to horizon
D – sun altitude is 6^{o} below the celestial horizon

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

21450. (Refer to figure 061-12)

The UTC of sunrise on 6 December at WINNIPEG (Canada) (49^{o} 50'N 097^{o} 30'W) is:

A – 0930
B – 0113
C – 2230
D – 1413

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24002. (Refer to figure 061-04)
Given:
TAS is 120 kt
ATA ‘X’ 1232 UTC
ETA ‘Y’ 1247 UTC
ATA ‘Y’ is 1250 UTC

What is ETA ‘Z’?

A – 1257 UTC
B – 1302 UTC
C – 1300 UTC
D – 1303 UTC

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

24028. In 8 hours and 8 minutes the mean sun has moved how many degrees (°) along the celestial equator?

A – 18°
B – 148°
C – 122°
D – 56°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

24035. Morning Civil twilight begins when:

A – the sun’s upper edge is tangential to the celestial horizon
B – the centre of the sun is 12° below the celestial horizon
C – the centre of the sun is 18° below the celestial horizon
D – the centre of the sun is 6° below the celestial horizon

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24058. When the time is 1400 LMT at 90o West, it is:

A – 1400 LMT at 90o East
B – 1200 LMT at 120o West
C – 1000 LMT at 60o West
D – 0600 LMT at the Prime meridian

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

24059. When the time is 2000 UTC, it is:

A – 1400 LMT at 90o West
B – 2400 LMT at 120o West
C – 1200 LMT at 60o East
D – 0800 LMT at the Prime meridian

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

24061. Which of the following alternatives is correct when you cross the international date line?

A – The date will increase if you are crossing on a westerly heading
B – The date will increase if you are crossing on a easterly heading
C – The date will always be the same
D – If you are crossing from westerly longitude to easterly longitude the date will remain the same

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

25150. On 27 Feb, at S5210.0 E04000.0, the sunrise is at 0230 UTC. On the same day, at S5210.0 W03500.0, the sunrise is at:

A – 0230 UTC
B – 0510 UTC
C – 0730 UTC
D – 2130 UTC

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25151. The UTC of the end of Evening Civil Twilight in position N51000' W008000' on 15 August is:

A – 1928 UTC
B – 1944 UTC
C – 2000 UTC
D – 2032 UTC

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25192. (Refer to figures 061-13 and 061-15)

If it is 1200 Standard Time on 10th July in Queensland, Australia, the Standard Time in Hawaii, USA is:

A – 1200ST 10 July
B – 1000ST 10 July
C – 1600ST 09 July
D – 0200ST 10 July

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25193. The months in which the difference between apparent noon and mean noon is greatest are:

A – February and November
B – January and July
C – March and September
D – June and December

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

25269. (Refer to figures 061-13 and 061-15)

What is the Standard Time in Hawaii when it is 0600 ST on the 16th July in Queensland, Australia?

A – 1000 ST 15th July
B – 2000 ST 15th July
C – 1000 ST 16th July
D – 1000 ST 17th July

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

25298. If it is 0700 hours Standard Time in Kuwait, what is the Standard Time in Algeria?

A – 0500
B – 0900
C – 1200
D – 0300

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

061-01-04 Distances

8289. Isogrives are lines that connect positions that have:

A – the same horizontal magnetic field strength
B – the same grivation
C – the same variation
D – 0° magnetic dip

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11298. The north and south magnetic poles are the only positions on the earth's surface where:

A – a freely suspended compass needle will stand horizontal
B – isogonals converge
C – a freely suspended compass needle will stand vertical
D – the value of magnetic variation equals 90°

Ans: C

15426. The lines on the earth's surface that join points of equal magnetic variation are called:

A – isogrives
B – isoclines
C – isogonals
D – isotachs

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

24004. A great circle on the Earth running from the North Pole to the South Pole is called:

A – a longitude
B – a parallel of latitude
C – a difference of longitude
D – a meridian

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24013. An aircraft is following the 45oN parallel of latitude. The track followed is a:

A – constant-heading track
B – rhumb line
C – great circle
D – constant-drift track

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

24021. How does the convergency of any two meridians on the Earth change with varying latitude?

A – It changes as cosine of latitude
B – It changes as sine of latitude
C – It increases with decrease of latitude
D – It is of constant value and does not change with latitude

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

24024. How many small circles can be drawn between any two points on a sphere?

A – One
B – None
C – An unlimited number
D – Two

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

24027. If you are flying along a parallel of latitude, you are flying:

A – a great circle track
B – on a north-south track
C – on a track which is constantly changing direction
D – a rhumb line track

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24032. In which occasions does the rhumb line track and the great circle track coincide on the surface of the Earth?

A – On East-West tracks in polar areas
B – On high latitude tracks directly East-West
C – On East-West tracks in the northern hemisphere north of the magnetic equator
D – On tracks directly North-South and on East-West tracks along the Equator

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24057. When flying on a westerly great circle track in the Southern Hemisphere you will:

A – fly a spiral and finally end up at the south pole
B – experience an increase in the value of true track
C – always have the rhumb line track between the departure point and the destination to the left of your great circle track
D – experience a decrease in the value of true track

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

061-01-05 Distance

16287. How many feet are there in 1 sm?

A – 3.280 ft
B – 5.280 ft
C – 6.080 ft
D – 1.000 ft

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

16288. How many feet are there in a nm?

A – 3.280 ft
B – 5.280 ft
C – 6.080 ft
D – 1.000 ft

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

16289. How many feet are there in a km?

A – 3.280 ft
B – 5.280 ft
C – 6.080 ft
D – 1.000 ft

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

16291. How many centimetres are equivalent to 36.25 inches?

A – 92.08 cm
B – 0.014 m
C – 14.27 cm
D – 11.05 cm

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

16292. How many feet are equivalent to 9.5 km?

A – 31.160 ft
B – 50.160 ft
C – 57.760 ft
D – 9.500 ft

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

16293. The International Nautical Mile defined by ICAO is equivalent to ___ m.

A – 1.582m
B – 1.652m
C – 1.852m
D – 1.962m

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

24005. A nautical mile is:

A – 1609 metres
B – 1852 metres
C – 1012 metres
D – 1500 metres

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

24041. The distance along a meridian between 63o55'N and 13o47'S is:

A – 3008 NM
B – 7702 NM
C – 5008 NM
D – 4662 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24055. What is the length of one degree of longitude at latitude 60° South?

A – 30 NM
B – 52 NM
C – 60 NM
D – 90 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

24056. What is the rhumb line distance, in nautical miles, between two positions on latitude 60°N, that are separated by 10° of longitude?

A – 300 NM
B – 520 NM
C – 600 NM
D – 866 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

061-02 MAGNETISM AND COMPASSES

061-02-01 General Principles

8325. What is the dip angle at the South Magnetic Pole?

A – 0 deg
B – 90 deg
C – 180 deg
D – 64 deg

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8345. What is the value of magnetic dip at the South Magnetic Pole?

A – 360°
B – 180°
C – 090°
D – 0°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8348. The angle between True North and Magnetic North is known as:

A – deviation
B – variation
C – alignment error
D – dip

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8351. Isogonic lines connect positions that have:

A – the same variation
B – 0° variation
C – the same elevation
D – the same angle of magnetic dip

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8354. At a specific location, the value of magnetic variation:

A – depends on the true heading
B – depends on the type of compass installed
C – depends on the magnetic heading
D – varies slowly over time

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8355. What is the definition of magnetic variation?

A – The angle between the direction indicated by a compass and Magnetic North
B – The angle between True North and Compass North
C – The angle between Magnetic North and True North
D – The angle between Magnetic Heading and Magnetic North

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8358. The horizontal component of the earth's magnetic field:

A – is approximately the same at all magnetic latitudes less than 60º
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 magnetic latitudes 50ºN and 50ºS

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8370. Isogonals converge at the:

A – Magnetic equator
B – North and South geographic and magnetic poles
C – North magnetic pole only
D – North and South magnetic poles only

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8375. If variation is West; then:

A – True North is West of Magnetic North
B – Compass North is West of Magnetic North
C – True North is East of Magnetic North
D – Magnetic North is West of Compass North

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8385. Complete the following statement regarding magnetic variation. The charted values of magnetic variation on earth normally change annually due to:

A – a reducing field strength causing numerical values at all locations to decrease
B – magnetic pole movement causing numerical values at all locations to increase
C – magnetic pole movement causing numerical values at all locations to increase or decrease
D – an increasing field strength causing numerical values at all locations to increase

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8388. Which of these is a correct statement about the Earth's magnetic field?

A – It acts as though there is a large blue magnetic pole in Northern Canada
B – The angle of dip is the angle between the vertical and the total magnetic force
C – It may be temporary, transient, or permanent
D – It has no effect on aircraft deviation

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8389. When turning right from 330º (C) to 040º (C) in the northern hemisphere, the reading of a direct reading magnetic compass will:

A – over-indicate the turn and liquid swirl will decrease the effect
B – under-indicate the turn and liquid swirl will increase 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8390. Isogonals are lines of equal:

A – compass deviation
B – magnetic variation
C – pressure
D – wind velocity

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8391. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8395. An aircraft is over position HO (55°30N 060°15W), where YYR VOR (53°30N 060°15W) can be received. The magnetic variation is 31°W at HO and 28°W at YYR. What is the radial from YYR?

A – 031°
B – 208°
C – 028°
D – 332°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8397. A line drawn on a chart which joins all points where the value of magnetic variation is zero is called an:

A – isogonal
B – aclinic line
C – agonic line
D – isotach

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8398. The angle between True North and Magnetic North is called:

A – compass error
B – deviation
C – variation
D – drift

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8408. The value of magnetic variation on a chart changes with time. This is due to:

A – movement of the magnetic poles, causing an increase
B – increase in the magnetic field, causing an increase
C – reduction in the magnetic field, causing a decrease
D – movement of the magnetic poles, which can cause either an increase or a decrease

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8414. Given:

True track is 348°
Drift 17° left
Variation 32°W
Deviation 4°E
What is the compass heading?

A – 007°
B – 033°
C – 359°
D – 337°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8416. The agonic line:

A – is midway between the magnetic North and South poles
B – follows the geographic equator
C – is the shorter distance between the respective True and Magnetic North and South poles
D – Follows separate paths out of the North polar regions, one currently running through Western Europe and the other through theUSA

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8427. Isogonal lines converge as follows:

A – at the North Magnetic Pole
B – at the North and South Magnetic and Geographical Poles
C – at the North and South Magnetic poles
D – at the Magnetic equator

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

9462. 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 agonic line is the line of zero magnetic dip
B – An isogonal is a line which connects places with the same magnetic variation; the aclinic 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

9740. An Agonic line is a line that connects:

A – positions that have the same variation
B – positions that have 0^{o} variation
C – points of equal magnetic dip
D – points of equal magnetic horizontal field strength

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

9744. 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 up from 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 down to 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

9771. When is the magnetic compass most effective?

A - In the region of the magnetic South Pole
B – About midway between the magnetic poles
C – In the region of the magnetic North Pole
D – On the geographic equator

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

9780. At the magnetic equator:

A – dip is zero
B – variation is zero
C – deviation is zero
D – the isogonal is an agonic line

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

9783. The value of magnetic variation:

A – varies between maximum values of 45°E and 45°W
B – is a maximum of 180°
C – is always 0° at the magnetic equator
D – is never greater than 90°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

9794. Where is a compass most effective?

A – About midway between the earth's 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

9819. A magnetic compass will be most effective at:

A – a position roughly half way between the magnetic poles
B – the South Magnetic Pole
C – the North Magnetic Pole
D – the Equator

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

14653. When accelerating 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 towards the north
B – clockwise giving an apparent turn towards the south
C – anti-clockwise giving an apparent turn towards the north
D – anti-clockwise giving an apparent turn towards the south

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

16296. When a magnetized compass needle is freely suspended in the Earth's magnetic field, when free from extraneous magnetic influence, it will align itself with:

A – true North
B – magnetic North
C – absolute North
D – relative North

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

16297. When a magnetized compass needle is freely suspended in the Earth's magnetic field, and affected by extraneous magnetic influence, it will align itself with:

A – true North
B – magnetic North
C – compass North
D – relative North

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

16299. When is Magnetic North Pole is East of the True North Pole variation is:

A – + and easterly
B – - and easterly
C – - and westerly
D – + and westerly

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

16300. When the Magnetic Pole is West of the True North pole variation is:

A – + and easterly
B – - and easterly
C – - and westerly
D – + and westerly

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

16301. An isogonal is:

A – a line of equal wind speed
B – a line of equal magnetic deviation
C – a line of zero magnetic variation
D – a line of equal magnetic variation

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

16302. The agonic line is:

A – a line of zero magnetic deviation
B – a line of equal magnetic deviation
C – a line of zero magnetic variation
D – a line of equal magnetic variation

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

16304. What is deviation?

A – The angle between magnetic North and compass North
B – The angle between magnetic North and True North
C – The angle between True North and compass North
D – The angle between True North and magnetic North

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

16305. Deviation is:

A – an error to be added to magnetic headings
B – a correction to be added to magnetic heading to obtain compass heading
C – a correction to be added to compass heading to obtain magnetic heading
D – an error to be added to compass heading to obtain magnetic heading

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

24043. The force acting on the needle 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 horizontal component of the earth's magnetic field

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

24048. The horizontal component of the earth's magnetic field:

A – weakens with increasing distance from the nearer magnetic pole
B – weakens with increasing distance from the magnetic poles
C – is stronger closer to the magnetic equator
D – is approximately the same at all magnetic latitudes less than 60^{o}

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25196. The lines on a chart joining places of equal magnetic dip are called:

A – Aclinic lines
B – Isogonals
C – Isoclinals
D – Agonic lines

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25197. An aircraft is accelerating on a westerly heading in the Northern Hemisphere; the effect on a Direct Reading Compass will result in:

A – An apparent turn to the West
B – An indication of a turn to the North
C – A decrease in the indicated reading
D – An indication of a turn to the South

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

25198. When should a DRC be “swung”?

A – Every 6 months
B – Following a change of magnetic latitude
C – For night use
D – After flying in an area where lightning is visible

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

25200. An aircraft, in the Northern Hemisphere, turns right from 330(C) in a Rate 1 Turn for 30 secs. As the aircraft rolls out, does the compass overread or underread and will liquid swirl increase or decrease the error:

A – Underread Decrease
B – Underread Increase
C – Overread Decrease
D – Overread Increase

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

25201. An aircraft is accelerating on a westerly heading in the Northern Hemisphere. The effect on a Direct Reading Magnetic Compass is:

A – Underreads North
B – Underreads South
C – Overreads North
D – Overreads South

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25574. What is the maximum possible value of Dip Angle?

A – 66°
B – 180°
C – 90°
D – 45°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

061-02-02 Aircraft Magnetism

8339. Given:

True Track = 352 deg
Variation = 11W
Deviation = .5
Drift = 10R
What is Heading (C)?

A – 078 C
B – 346 C
C – 358 C
D – 025 C

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8341. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8363. When an aircraft on a westerly heading on the northern hemisphere accelerates, the effect of the acceleration error causes the magnetic compass to:

A – lag behind the turning rate of the aircraft
B – indicate a turn towards the north
C – indicate a turn towards the south
D – to turn faster than the actual turning rate of the aircraft

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8373. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8374. 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 South
B – on an Easterly heading, a longitudinal acceleration causes an apparent turn to the North
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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8381. The angle between Magnetic North and Compass North is called:

A – magnetic variation
B – compass error
C – compass deviation
D – alignment error

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8386. You are in the Northern hemisphere, heading 135C on a Direct Reading Magnetic Compass. You turn right in a Rate 1 turn for 30 seconds. Do you roll out on an indicated heading of:

A – greater than 225
B – less than 225
C – equal to 225
D – not possible to determine

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8389. When turning right from 330o(C) to 040o(C) in the northern hemisphere the reading of a direct reading magnetic compass will:

A – over-indicate the turn and liquid swirl will decrease the effect
B – under-indicate the turn and liquid swirl will increase 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8396. Compass deviation is defined as the angle between:

A – True North and Magnetic North
B – Magnetic North and Compass North
C – True North and Compass North
D – The horizontal and the total intensity of the earth's magnetic field

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8401. The value of variation:

A – is zero at the magnetic equator
B – has a maximum value of 180 deg
C – has a maximum value of 45E or 45W
D – cannot exceed 90 deg

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8404. Deviation applied to magnetic heading gives:

A – magnetic course
B – true heading
C – compass heading
D – magnetic track

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8411. At the magnetic equator, when accelerating after take off on heading West, a direct reading compass:

A – underreads the heading
B – overreads the heading
C – indicates the correct heading
D – indicates a turn to the south

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8419. 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 – 060°
B – less than 060°
C – more than 060°
D – more or less than 060° depending on the pendulous suspension used

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8421. When accelerating on an easterly heading in the Northern hemisphere, the compass card of a direct reading magnetic compass will turn:

A – anti-clockwise giving an apparent turn toward the south
B – clockwise giving an apparent turn toward the south
C – anti-clockwise giving an apparent turn toward the north
D – clockwise giving an apparent turn toward the north

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8423. You are turning from 330o to 040o in the Northern hemisphere using timing. You stop the turn at the correct time. Before the direct indicating magnetic compass settles down, does it over-read or under-read, and does the effect of liquid swirl increase or decrease?

A – Under-read; increase
B – Over-read; decrease
C – Under-read; decrease
D – Over-read; increase

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8424. 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 least 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 greatest at high latitudes
D – Turning errors are greatest on east/west headings, and are greatest at high latitudes

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

9767. Permanent magnetism in aircraft arises chiefly from:

A – exposure to the earth's magnetic field during normal operation
B – hammering, and the effect of the earth's magnetic field, whilst under construction
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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

24038. One purpose of a compass calibration is to reduce the difference, if any, between:

A – compass north and magnetic north
B – compass north and true north
C – true north and magnetic north
D – compass north and the lubber line

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

061-02-03 Principles; Direct & Remote Reading Compasses

8343. In a remote indicating compass system the amount of deviation caused by aircraft magnetism and electrical circuits may be minimised by:

A – positioning the master unit in the centre of the aircraft
B – the use of repeater cards
C – mounting the detector unit in the wingtip
D – using a vertically mounted gyroscope

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8344. The main advantage of a remote indicating compass over a direct reading compass is that it:

A – is able to magnify the earth's magnetic field in order to attain greater accuracy
B – has less moving parts
C – requires less maintenance
D – senses, rather than seeks, the magnetic meridian

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8352. The purpose of compass check swing is to:

A – cancel out the horizontal component of the earth's magnetic field
B – cancel out the vertical component of the earth's magnetic field
C – measure the angle between Magnetic North and Compass North
D – cancel out the effects of the magnetic fields found on board the aeroplane

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8362. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8366. Why are the detector units of slaved gyro compasses usually located in the aircraft wingtips?

A – With one detector unit in each wingtip, compass deviations are cancelled out
B – To isolate the detector unit from the aircraft deviation sources
C – To isolate the detector unit from the Earth's magnetic field
D – To reduce turning and acceleration errors

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8371. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8372. The direct reading magnetic compass is made aperiodic (dead beat) by:

A – using the lowest acceptable viscosity compass liquid
B – keeping the magnetic assembly mass close to the compass point and by using damping wires
C – using long magnets
D – pendulous suspension of the magnetic assembly

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8384. The main reason for usually mounting the detector unit of a remote indicating compass in the wingtip of an aeroplane is to:

A – facilitate easy maintenance of the unit and increase its exposure to the Earth's magnetic field
B – reduce the amount of deviation caused by aircraft magnetism and electrical circuits
C – place it is 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8405. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8407. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8460. An aircraft's compass must be swung:

A – if the aircraft has been in the hangar for a long time and has been moved several times
B – if the aircraft has been subjected to hammering
C – every maintenance inspection
D – after a change of theatre of operations at the same magnetic latitude

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

9803. The sensitivity of a direct reading magnetic compass is:

A – inversely proportional to the horizontal component of the earth's magnetic field
B – proportional to the horizontal component of the earth's magnetic field
C – inversely proportional to the vertical component of the earth's magnetic field
D – inversely proportional to the vertical and horizontal components of the earth's magnetic field

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

9805. What is the advantage of the remote indicating compass (slaved gyro compass) over the direct reading magnetic compass?

A – It is lighter
B – It is connected to a source of electrical power and so is more accurate
C – It senses the earth's magnetic field rather than seeks it, so is more sensitive
D – It is not affected by aircraft deviation

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

15439. The main reason for mounting the detector unit of a remote reading compass in the wingtip of an aeroplane is:

A – to ensure that the unit is in the most accessible position on the aircraft for ease of maintenance
B – by having detector units on both wingtips, to cancel out the deviation effects caused by the aircraft structure
C – to minimise the amount of deviation caused by aircraft magnetism and electrical circuits
D – to maximise the units exposure to the earth's magnetic field

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

15452. The sensitivity of a direct reading compass varies:

A – inversely with the vertical component of the earth's magnetic
B – directly with the horizontal component of the earth's magnetic field
C – directly with the vertical component of the earth's magnetic field
D – inversely with both vertical and horizontal components of the earth's magnetic field

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

16307. If compass HDG is 340^{o} and deviation +3, what is magnetic heading?

A – Deviation is plus therefore East, so compass is least, so magnetic is 343^{o}
B – Deviation is plus therefore West, so compass is least, so magnetic is 343^{o}
C – Deviation is plus therefore East, so compass is best, so magnetic is 337^{o}
D – Deviation is plus therefore East, so compass is best, so magnetic is 343^{o}

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

16308. If true HDG is 165º and variation -3 what is magnetic heading?

A – Variation is minus therefore West, so magnetic is best, so magnetic is 168º
B – Variation is minus therefore West, so magnetic is least, so magnetic is 162º
C – Variation is plus therefore East, so magnetic is best, so magnetic is 162º
D – Variation is plus therefore East, so magnetic is best, so magnetic is 168º

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

16309. In still air, you wish to fly a true of 315o. Variation is 4oW. Deviation is 2oE. What Compass heading should you fly?

A – 321
B – 313
C – 317
D – 309

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

24034. Magnetic compass calibration is carried out to reduce:

A – deviation
B – variation
C – parallax error
D – acceleration errors

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

25132. You are in the northern hemisphere, heading West, and the aircraft is accelerating. Will a direct reading magnetic compass over-read or under-read and is the compass indicating a turn to the north or to the south:

A – over-reads north
B – over- reads south
C – under-reads north
D – under-reads south

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

25199. Concerning a Direct Reading Compass in the Northern Hemisphere, it can be said:

A – On an easterly heading, a lateral acceleration produces an apparent turn to the South
B – On an easterly heading, a longitudinal acceleration produces an apparent turn to the North
C – On a westerly heading, a lateral acceleration produces an apparent turn to the North
D – On a westerly heading, a longitudinal acceleration produces an apparent turn to the South

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

061-03 CHARTS

061-03-01 General properties of miscellaneous types of projections

8435. The standard parallels of a Lamberts conical orthomorphic projection are 07°40N and 38°20N. The constant of the cone for this chart is:

A – 0.60
B – 0.39
C – 0.92
D – 0.42

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8437. On a transverse Mercator chart, the scale is exactly correct along the:

A – prime meridian and the equator
B – equator and parallel of origin
C – meridian of tangency and the parallel of latitude perpendicular to it
D – meridians of tangency

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8439. On a Lambert Conformal Conic chart earth convergency is most accurately represented at the:

A – north and south limits of the chart
B – parallel of origin
C – standard parallels
D – equator

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8457. An Oblique Mercator projection is used specifically to produce:

A – plotting charts in equatorial regions
B – radio navigational charts in equatorial regions
C – topographical maps of large east/west extent
D – charts of the great circle route between two points

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8461. The main use for an Oblique Mercator chart would be:

A – for countries with large changes in latitude but small changes in longitude
B – route charts for selected great circle routes
C – better topographical coverage of polar regions
D – topographical coverage of equatorial regions

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8463. Scale on a Lamberts conformal chart is:

A – constant along a parallel of latitude
B – constant along a meridian of longitude
C – constant over the whole chart
D – varies with latitude and longitude

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8469. On a transverse Mercator chart, with the exception of the Equator, parallels of latitude appear as:

A – hyperbolic lines
B – straight lines
C – ellipses
D – parabolas

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8490. The two standard parallels of a conical Lambert projection are at N10º40 and N41º20. The cone constant of this chart is approximately:

A – 0.18
B – 0.90
C – 0.66
D – 0.44

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8491. The constant of the cone, on a Lambert chart where the convergence angle between longitudes 010°E and 030°W is 30°, is:

A – 0.40
B – 0.75
C – 0.50
D – 0.64

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8502. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

10993. A Mercator chart has a scale at the equator = 1:3 704 000. What is the scale at latitude 60o S?

A – 1 : 1 852 000
B – 1 : 7 408 000
C – 1 : 3 208 000
D – 1 : 185 200

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

10994. A Lambert conformal conic projection, with two standard parallels:

A – shows lines of longitude as parallel straight lines
B – shows all great circles as straight lines
C – the scale is only correct at parallel of origin
D – the scale is only correct along the standard parallels

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

14651. 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 – 38°15
B – 51°45
C – 52°05
D – 80°39

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

14655. The nominal scale of a Lambert conformal conic chart is the:

A – scale at the equator
B – scale at the standard parallels
C – mean scale between pole and equator
D – mean scale between the parallels of the secant cone

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

14669. 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 – 68°25
B – 21°35
C – 23°18
D – 66°42

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

15413. 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 : 4 750 000
B – 1 : 7 000 000
C – 1 : 6 000 000
D – 1 : 3 500 000

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

15417. At 60° N the scale of a direct Mercator chart is 1:

A – 1 : 3 000 000
B – 1 : 3 500 000
C – 1 : 1 500 000
D – 1 : 6 000 000

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

15440. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

15456. A direct Mercator graticule is based on a projection that is:

A – spherical
B – concentric
C – cylindrical
D – conical

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

15459. What is the value of the convergence factor on a Polar Stereographic chart?

A – 0.866
B – 0.5
C – 0.0
D – 1.0

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

16311. The Earth has been charted using:

A – WGP84
B – WGS84
C – GD84
D – GPS84

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

24007. A straight line is drawn on a Lamberts conformal conic chart between two positions of different longitude. The angular difference between the initial true track and the final true track of the line is equal to:

A – earth convergency
B – chart convergency
C – conversion angle
D – difference in longitude

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

24022. How does the chart convergency change with latitude in a Lambert Conformal projection?

A – It changes with sine of latitude
B – It changes with cosine of latitude
C – It increases with increase of latitude
D – It is constant and does not change with latitude

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24023. How does the scale vary in a Direct Mercator chart?

A – The scale increases with increasing distance from the Equator
B – The scale decreases with increasing distance from the Equator
C – The scale is constant
D – The scale increases south of the Equator and decreases north of the Equator

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

24037. On a chart a straight line is drawn between two points and has a length of 4.63 cm. What is the chart scale if the line represents 150 NM?

A – 1 : 1 000 000
B – 1 : 6 000 000
C – 1 : 3 000 000
D – 1 : 5 000 000

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

24054. What is the constant of the cone for a Lambert conic projection whose standard parallels are at 50oN and 70oN?

A – 0.500
B – 0.941
C – 0.866
D – 0.766

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25216. Isogrivs on a chart indicate lines of:

A – Zero magnetic variation
B – Equal magnetic tip
C – Equal horizontal directive force
D – Equal grivation 1 min

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

061-03-02 Representation of meridians, parallel, great circles & rhumb lines

8453. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8455. On a Direct Mercator chart a great circle will be represented by a:

A – complex curve
B – curve concave to the equator
C – curve convex to the equator
D – straight line

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8474. On a Direct Mercator chart, meridians are:

A – inclined, equally spaced, straight lines that meet at the nearer pole
B – parallel, equally spaced, vertical straight lines
C – parallel, unequally spaced, vertical straight lines
D – inclined, unequally spaced, curved lines that meet at the nearer pole

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8476. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8494. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8497. On a Direct Mercator chart at latitude of 45oN, 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 30oN, a distance of:

A – 45 NM
B – 73.5 NM
C – 78 NM
D – 110 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8511. The parallels on a Lambert Conformal Conic chart are represented by:

A – parabolic lines
B – straight lines
C – arcs of concentric circles
D – hyperbolic lines

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8518. On a Lambert Conformal Conic chart great circles that are not meridians are:

A – curves concave to the parallel of origin
B – straight lines
C – curves concave to the pole of projection
D – straight lines within the standard parallels

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8521. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8522. On a Direct Mercator chart, great circles are shown as:

A – curves convex to the nearer pole
B – straight lines
C – rhumb lines
D – curves concave to the nearer pole

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

9810. A Rhumb line is:

A – the shortest distance between two points on a Polyconic projection
B – a line on the surface of the earth cutting all meridians at the same angle
C – any straight line on a Lambert projection
D – a line convex to the nearest pole on a Mercator projection

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

10956. Which one of the following, concerning great circles on a Direct Mercator chart, is correct?

A – They are all curves convex to the equator
B – They are all curves concave to the equator
C – They approximate to straight lines between the standard parallels
D – With the exception of meridians and the equator, they are curves concave to the equator

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

10970. How does scale change on a normal Mercator chart?

A – Expands as the secant2 (1/2 co-latitude)
B – Expands directly with the secant of the latitude
C – Correct on the standard parallels, expands outside them, contracts within them
D – Expands as the secant of the E/W great circle distance

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

10998. Which one of the following describes the appearance of rhumb lines, except meridians, on a Polar Stereographic chart?

A – Straight lines
B – Ellipses around the Pole
C – Curves convex to the Pole
D – Curves concave to the Pole

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

10999. A straight line on a Lambert Conformal Projection chart for normal flight planning purposes:

A – can only be a parallel of latitude
B – is a Loxodromic line
C – is a Rhumb line
D – is approximately a Great Circle

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

11011. On a Lambert chart (standard parallels 37°N and 65°N), with respct to the straight line drawn on the map the between A (N49° W030°) and B (N48° W040°), the:

A – great circle is to the north, the rhumb line is to the south
B – great circle and rhumb line are to the north
C – great circle and rhumb line are to the south
D – rhumb line is to the north, the great circle is to the south

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

11013. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11018. On a Direct Mercator, rhumb lines are:

A – straight lines
B – curves concave to the equator
C – ellipses
D – curves convex to the equator

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11020. On which of the following chart projections is it NOT possible to represent the north or south poles?

A – Lamberts conformal
B – Direct Mercator
C – Transverse Mercator
D – Polar stereographic

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

14650. On a Lambert conformal conic chart, with two standard parallels, the quoted scale is correct:

A – along the prime meridian
B – along the two standard parallels
C – in the area between the standard parallels
D – along the parallel of origin

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

15419. Parallels of latitude on a Direct Mercator chart are:

A – parallel straight lines equally spaced
B – arcs of concentric circles equally spaced
C – straight lines converging above the pole
D – parallel straight lines unequally spaced

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

15455. The scale on a Lambert conformal conic chart:

A – is constant along a meridian of longitude
B – is constant across the whole map
C – varies slightly as a function of latitude and longitude
D – is constant along a parallel of latitude

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

15458. On a Lambert conformal conic chart the distance between parallels of latitude spaced the same number of degrees apart:

A – expands between, and reduces outside, the standard parallels
B – is constant throughout the chart
C – reduces between, and expands outside, the standard parallels
D – is constant between, and expands outside the standard parallels

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

16271. What is the Rhumb line (RL) direction from 45ºN 14º12W to 45ºN 12º48E?

A – 270º (T)
B – 090º (T)
C – 090º (M)
D – 270º (M)

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

24006. A rhumb line on a Direct Mercator chart appears as a:

A – straight line
B – complex curve
C – curve convex to the nearer pole
D – small circle concave to the nearer pole

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

24060. Where on a Direct Mercator projection is the chart convergency correct compared to the earth convergency?

A – All over the chart
B – At the two parallels of tangency
C – At the poles
D – At the equator

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

25153. The rhumb line distance between points C (N6000.0 E00213.0) and D (N60000.0 W 00713.0) is:

A – 300 nm
B – 520 nm
C – 150 nm
D – 600 nm

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

25194. An aircraft starts at position 0411.0S 17812.2W and heads True North for 2950nm, then turns 90^{o} left maintaining a rhumb line track for 314 km. The aircraft's final position is:

A – 5500.0N 17412.2W
B – 4500.0N 17412.2W
C – 5500.0N 17713.8E
D – 4500.0N 17713.8E

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

25203. The appearance of a rhumb line on a Mercator chart is:

A – A small circle concave to the nearer pole
B – A straight line
C – A spiral curve
D – A curved line

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

25204. The distance on a Lambert's chart, between two parallels of latitude the same number of degrees apart:

A – is constant all over the chart
B – is constant between the Standard Parallels and expands outside them
C – Expands between the Standard Parallels, but reduces outside them
D – Reduces between the Standard Parallels, but expands outside them

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

25207. The scale quoted on a Lamberts chart is:

A – The scale at the Standard Parallels
B – The scale at the Equator
C – The mean scale between the Pole and the Equator
D – The mean scale at the Parallel of the Secant of the Cone

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

25212. On a conformal chart, scale is:

A – Constant
B – Constant along a meridian of longitude
C – Variable: it varies as a function of latitude and longitude
D – Constant along a parallel of latitude

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

25214. On a Transverse Mercator chart scale is correct at:

A – The 180o meridian
B – The False Meridian
C – The Great Circle of Tangency
D – The Meridian of Tangency

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

25215. A pilot navigates from A to B on 7000.0N on a Polar Stereographic chart. A is at 6000.0W, B is at 6000.0E; the initial track at A is:

A – 030°
B – 150°
C – 350°
D – 210°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

25285. Which of the following differences in latitude will give the biggest difference in the initial Great Circle track and the mean Great Circle track between two points separated by 10° change of longitude?

A – 60N and 60S
B – 60N and 55N
C – 30S and 30N
D – 30S and 25S

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

25299. In which of the following projections does a plane surface touch the Reduced Earth at one of the Poles?

A – Gnomic
B – Stereographic
C – Lambert's
D – Direct Mercator

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

25305. On a Polar Stereographic map, a straight line is drawn from position A (70N 102W) to position B (80N 006E). The point of highest latitude along this line occurs at longitude 035W. What is the initial straight-line track angle from A to B, measured at A?

A – 049
B – 077
C – 229
D – 023

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

25575. The initial straight track from A (75N 60E) to B (75N 60W) on a Polar Stereographic chart is:

A – 030°
B – 360°
C – 060°
D – 330°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

061-03-03 The use of current aeronautical charts

8428. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

SHA VOR N5243.3 W00853.1
CON VOR N5354.8 W00849.1

Aircraft position N5330 W00800. Which of the following lists two radials that are applicable to the aircraft position?

A – SHA 213° CON 310°
B – SHA 042° CON 138°
C – SHA 033° CON 130°
D – SHA 221° CON 318°

Ref: all

Ans: B

8429. (Refer to Jeppesen Student Manual – chart E(lO)1 or figure 061-11)
Given:
SHA VOR N5243.3 W00853.1
CRK VOR N5150.4 W00829.7

Aircraft position N5220 W00910
Which of the following lists two radials that are applicable to the aircraft position:

A – SHA 025° CRK 141°
B – SHA 212° CRK 328°
C – SHA 205° CRK 321°
D – SHA 033° CRK 149°

Ref: all

Ans: B

8430. At 0020 UTC an aircraft is crossing the 310º radial at 40 NM of a VOR/DME station. At 0035 UTC the radial is 040o and DME distance is 40 NM. Magnetic variation is zero. The true track and ground speed are:

A – 080º – 226 kt
B – 090º – 232 kt
C – 085º – 226 kt
D – 088º – 232 kt

Ref: all

Ans: C

8431. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

SHA VOR/DME (N5243.3 W00853.1)
Radial 025º/49 NM

What is the aircraft position?

A – N5328 W00820
B – N5330 W00830
C – N5155 W00915
D – N5200 W0925

Ref: all

Ans: B

8433. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from CON VOR/DME (N5354.8 W00849.1) to position N5400 W00800?

A – 320º – 8 NM
B – 088º – 29 NM
C – 094º – 64 NM
D – 260º – 30 NM

Ref: all

Ans: B

8434. On 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 : 3 750 000
B – 1 : 5 000 000
C – 1 : 2 000 000
D – 1 : 6 000 000

Ref: all

Ans: B

8436. A straight line is drawn on a North Polar Stereographic chart joining Point A (7000N 06000W) to Point B (7000N 06000E). What is the initial track direction (going eastwards) of the line at A?

A – 090 T
B – 030 T
C – 120 T
D – 330 T

Ref: all

Ans: B

8438. (Refer to Jeppesen Student Manual – chart (E(LO)1 or figure 061-11)

What is the radial and DME distance from BEL VOR/DME (N5439.7 W00613.8) to position N5410 W00710?

A – 223° – 36 NM
B – 236° – 44 NM
C – 320° – 44 NM
D – 333° – 36 NM

Ref: all

Ans: B

8440. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Which of the following lists all the aeronautical chart symbols shown at position N5318.0 W00626.9?

A – VOR: DME: danger area
B – Civil airport: VOR: DME
C – Military airport: VOR: NDB
D – Military airport: VOR: DME

Ref: all

Ans: D

8441. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

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

Ref: all

Ans: A

8442. 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 : 5 560 000
B – 1 : 278 000
C – 1 : 780 000
D – 1 : 556 000

Ref: all

Ans: C

8443. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

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

Ref: all

Ans: A

8444. 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 ½ cosine of the co-latitude

Ref: all

Ans: A

8446. An aircraft starts at position 0410S 17822W and heads true north for 2950 nm, then turns 90 degrees left, and maintains a rhumb line track for 314 kilometers. What is its final position?

A – 5500N 17422W
B – 4500N 17422W
C – 5500N 17738E
D – 4500N 17738E

Ref: all

Ans: D

8447. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track (°T) and distance between CRN NDB (N5318.1 W00856.5) and EKN NDB (N5423.6 W00738.7)?

A – 044° – 82 NM
B – 042° – 83 NM
C – 036° – 81 NM
D – 035° – 80 NM

Ref: all

Ans: D

8448. 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 – 21 NM
B – 12 NM
C – 22 NM
D – 14 NM

Ref: all

Ans: B

8449. Given that:
A is N55 E/W 000
B is N54 E 010
If the true great circle track from A to B is 100T, what is the true Rhumb Line track at A?

A – 096
B – 107
C – 104
D – 100

Ref: all

Ans: C

8451. (Refer to figure 061-10)

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

Ref: all

Ans: A

8452. 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)

Ref: all

Ans: A

8454. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

SHA VOR (N5243.3 W00853.1) DME 50 NM
CRK VOR (N5150.4 W00829.7) DME 41 NM
Aircraft heading 270o(M)
Both DME distances increasing

What is the aircraft position?

A – N5215 W00745
B – N5215 W00940
C – N5200 W00935
D – N5235 W00750

Ref: all

Ans: C

8456. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track (°T) and distance between BAL VOR (N5318.0 W00626.9) and CFN NDB (N5502.6 W00820.4)?

A – 335° – 128 NM
B – 327° – 124 NM
C – 325° – 126 NM
D – 320° – 127 NM

Ref: all

Ans: B

8458. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Which of the following lists all the aeronautical chart symbols shown at position N5318.1 W00856.5?

A – Civil airport: VOR: DME: non-compulsory reporting point
B – VOR: DME: NDB: compulsory reporting point
C – Civil airport: NDB: DME: non-compulsory reporting point
D – VOR: DME: NDB: compulsory reporting point

Ref: all

Ans: C

8459. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

SHA VOR N5243.3 W00853.1
CON VOR N5354.8 W00849.1
Aircraft position N5320 W00950

Which 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°

Ref: all

Ans: A

8462. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

SHA VOR (N5243.3 W00853.1) radial 129°
CRK VOR (N5150.4 W00829.7) radial 047°

What is the aircraft position?

A – N5205 W00755
B – N5215 W00755
C – N5210 W00750
D – N5220 W00750

Ref: all

Ans: D

8465. Given:
Chart scale is 1: 850 000
The chart distance between two points is 4 centimetres
Earth distance is approximately:

A – 4 NM
B – 74 NM
C – 100 NM
D – 40 NM

Ref: all

Ans: D

8467. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What feature is shown on the chart at position N5351 W009017?

A – Connaught aerodrome
B – Castlebar aerodrome
C – Connemara aerodrome
D – Brittas Bay aerodrome

Ref: all

Ans: B

8468. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track (°M) and distance between CRN NB (N5318.1 W00856.5) and BEL VOR (N5439.7 W00613.8)?

A – 229° – 125 NM
B – 089° – 95 NM
C – 057° – 126 NM
D – 237° – 130 NM

Ref: all

Ans: C

8470. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

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

Ref: all

Ans: A

8471. 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 – 57 NM
B – 86 NM
C – 70 NM
D – 81 NM

Ref: all

Ans: B

8472. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

SHA VOR/DME (N5243.3 W00853.1)
Radial 165o/36 NM

What is the aircraft position?

A – N5210 W00830
B – N5208 W00840
C – N5315 W00915
D – N5317 W00908

Ref: all

Ans: A

8473. Approximately how many nautical miles correspond to 12 cm on a map with a scale of 1: 200 000?

A – 130
B – 150
C – 329
D – 43

Ref: all

Ans: A

8478. A course of 120o(T) is drawn between X(61o30N) and Y(58o30N) on a Lambert Conformal conic chart with a scale of 1: 1 000 000 at 60oN. The chart distance between X and Y is:

A – 33.4 cm
B – 66.7 cm
C – 38.5 cm
D – 36.0 cm

Ref: all

Ans: B

8481. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

SHA VOR N5243.3 W00853.1
CRK VOR N5150.4 W00829.7
Aircraft position N5230 W00820

Which of the following lists two radials that are applicable to the aircraft position?

A – SHA 131º CRK 017º
B – SHA 304º CRK 189º
C – SHA 312º CRK 197º
D – SHA 124º CRK 009º

Ref: all

Ans: A

8482. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

CRN VOR (N5318.1 W00856.5) DME 18 NM
SHA VOR (N5243.3 W00853.1) DME 30 NM
Aircraft heading 270º(M)
Both DME distances decreasing

What is the aircraft position?

A – N5252 W00923
B – N5310 N00830
C – N5307 W00923
D – N5355 W00825

Ref: all

Ans: B

8483. On a chart, the distance along a meridian between latitudes 45oN and 46oN is 6 cm. The scale of the chart is approximately:

A – 1 : 1 000 000
B – 1 : 850 000
C – 1 : 185 000
D – 1 : 18 500 000

Ref: all

Ans: B

8484. The following waypoints are entered into an inertial navigation system (INS)
WPT 1: 60N 30W
WPT 2: 60N 20W
WPT 3: 60N 10W
The intertial navigation is connected to the automatic pilot on the route WP1-WP2-WP3. The track change on passing WPT:

A – 1 9 deg increase
B – 1 4 deg decrease
C – zero
D – a 9 deg decrease

Ref: all

Ans: D

8485. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

SHA VOR (N5243.3 W00853.1) radial 205°
CRK VOR (5150.4 W00829.7) radial 317°

What is the aircraft position?

A – N5210 W00910
B – N5118 W00913
C – N5205 W00915
D – N5215 W00917

Ref: all

Ans: A

8486.(Refer to Jeppesen Student manual – chart E(LO)1 or figure 061-11)

What feature is shown on the chart at position NS311 W00637?

A – Clonbullogue aerodrome
B – Connemara aerodrome
C – KERRY/Farranfore aerodrome
D – Punchestown aerodrome

Ref: all

Ans: D

8487. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from CRK VOR/DME (N5150.4 W00829.7) to position N5140 W00730?

A – 106° – 38 NM
B – 104° – 76 NM
C – 293° – 39 NM
D – 113° – 38 NM

Ref: all

Ans: D

8488. The chart distance between meridians 10o apart at latitude 65° North is 3.75 inches. The chart scale at this latitude approximates:

A – 1 : 6 000 000
B – 1 : 5 000 000
C – 1 : 2 500 000
D – 1 : 3 000 000

Ref: all

Ans: B

8489. (Refer to Jeppesen Student Manual – chart (E(LO)1 or figure 061-11)

Which of the following lists all the aeronautical chart symbols shown at position N5150.4 W00829.7?

A – Civil airport: VOR: non-compulsory reporting point
B – Civil airport: VOR: DME: compulsory reporting point
C – VOR: DME: NDB: compulsory reporting point
D – VOR: DME: NDB: ILS

Ref: all

Ans: B

8492. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

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

Ref: all

Ans: A

8495. An aircraft at position 6000N 00522WS flies 165 km due East. What is the new position?

A – 6000N 00820E
B – 6000N 00224WS
C – 6000N 00108E
D – 6000N 00108W

Ref: all

Ans: B

8496. Two positions plotted on a polar stereographic chart, A (80ºN 000º) and B (70ºN 102ºW) are joined by a straight line whose highest latitude is reached at 035ºW. At point B, the true course is:

A – 247º
B – 023º
C – 203º
D – 305º

Ref: all

Ans: C

8498. Given:
An aircraft is flying a track of 255º(M). At 2254 UTC, it crosses radial 360º from a VOR station. At 2300 UTC, it crosses radial 330º 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 that it was at 2254 UTC
D – less than it was at 2254 UTC

Ref: all

Ans: A

8499. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track (ºT) and distance between WTD NDB (N5211.3 W00705.0) and FOY NDB (N5234.0 W00911.7)?

A – 075º – 81 NM
B – 294º – 80 NM
C – 286º – 81 NM
D – 277º – 83 NM

Ref: all

Ans: C

8500. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from CON VOR/DME (N5354.8 W00849.1) to position N5430 W00900?

A – 049° – 45 NM
B – 214° – 26 NM
C – 358° – 36 NM
D – 169° – 35 NM

Ref: all

Ans: C

8501. Given:
Waypoint 1.60°S 030°W
Waypoint 2.60°S 020°W
What will be the approximate latitude shown on the display unit of an inertial navigation system at longitude 025°W?

A – 060° 11'S
B – 059° 49'S
C – 060° 00'S
D – 060° 06'S

Ref: all

Ans: D

8503. On a chart, 49 nautical miles is represented by 7.0 centimetres. What is the scale?

A – 1/700,000
B – ½,015,396
C – 1/1,296,400
D – 1/1,156,600

Ref: all

Ans: C

8506. (refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from SHA VOA/DME (N5243.3 W00853.1) to position N5210 W00920?

A – 346° – 34 NM
B – 354° – 34 NM
C – 198° – 37 NM
D – 214° – 37 NM

Ref: all

Ans: D

8507. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

SHA VOR (N5243.3 W00853.1) radial 143°
CRK VOR (N5150.4 W00829.7) radial 050°

What is the aircraft position?

A – N5205 W00805
B – N5155 W00810
C – N5210 W00800
D – N5200 W00800

Ref: all

Ans: C

8510. 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 points is approximately:

A – 3.69 NM
B – 370.00 NM
C – 67.20 NM
D – 36.30 NM

Ref: all

Ans: D

8513. 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

Ref: all

Ans: A

8514. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

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

Ref: all

Ans: A

8515. An aircraft is at 5530N 03613W where the variation is 15W. It is tuned to a VOR located at 5330N 03613W where the variation is 12W. What VOR radial is the aircraft on?

A – 348
B – 012
C – 165
D – 015

Ref: all

Ans: B

8516. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

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

Ref: all

Ans: A

8519. 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 – 44.5
B – 38.1
C – 20.6
D – 54.2

Ref: all

Ans: C

8520. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from CRK VOR/DME (N5150.4 W00829.7) to position N5220 W00810?

A – 048° – 40 NM
B – 030° – 33 NM
C – 014° – 33 NM
D – 220° – 40 NM

Ref: all

Ans: B

8524. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track (°M) and distance between WTD NDB (N5211.3 W00705.0) and KER NDB (N5210.9 W00931.5)?

A – 270° – 89 NM
B – 090° – 91 NM
C – 278° – 90 NM
D – 098° – 90 NM

Ref: all

Ans: C

8525. A straight line drawn on a chart measures 4.63 cm and represents 150 NM. The chart scale is:

A – 1 : 3 000 000
B – 1 : 6 000 000
C – 1 : 5 000 000
D – 1 : 1 000 000

Ref: all

Ans: B

9741. 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°

Ref: all

Ans: A

9751. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)
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 - N5225 W00810
B – N5205 W00915
C – N5215 W00805
D – N5215 W00915

Ref: all

Ans: C

9817. 5 hours 20 minutes and 20 seconds hours time difference is equivalent to which change of longitude:

A – 81° 30
B – 78° 15
C – 79° 10
D – 80° 05

Ref: all

Ans: D

10205. An aircraft flies a great circle track from 56° N 070° W to 62° N 110° E. The total distance travelled is:

A – 2040 NM
B – 1788 NM
C – 5420 NM
D – 3720 NM

Ref: all

Ans: D

10955. An aircraft departs a point 0400N 17000W and flies 600 nm South, followed by 600 nm East, then 600 nm North, then 600 nm West. What is its final position?

A – 0400N 17000W
B – 0600S 17000W
C – 0400N 16958.1W
D – 0400N 17001.8W

Ref: all

Ans: C

10957. 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°36E
C – 008°E
D – 019°E

Ref: all

Ans: A

10959. 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 – 250°
B – 225°
C – 135°
D – 315°

Ref: all

Ans: B

10961. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

SHA VOR/DME (N5243.3 W000853.1)
Radial 120°/35 NM

What is the aircraft position?

A – N5230 W00800
B – N5300 W00945
C – N5225 W00805
D – N5250 W00950

Ref: all

Ans: A

10962. Assume a Mercator chart. The distance between positions A and B located on the same parallel and 10o longitude apart, is 6 cm. The scale at the parallel is 1: 9 260 000. What is the latitude of A and B?

A – 45° N or S
B – 30° N or S
C – 0°
D – 60° N or S

Ref: all

Ans: D

10963. Given:
Magnetic heading 311°
Drift angle 10° left
Relative bearing of NDB 270°
What is the magnetic bearing of the NDB measured from the aircraft?

A – 211°
B – 208°
C – 221°
D – 180°

Ref: all

Ans: C

10964. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from SHA VOR/DME (N5243.3 W00853.1) to position N5310 W00830?

A – 019º – 31 NM
B – 070º – 58 NM
C – 207º – 31 NM
D – 035º – 30 NM

Ref: all

Ans: D

10965. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

At position 5211N 00931W, which of the following denotes all the symbols?

A – Military airport, ILS, NDB
B – Civil airport, VOR, ILS
C – Military airport, VOR, ILS
D – Civil airport, ILS, NDB

Ref: all

Ans: D

10967. A straight line on a chart 4.89 cm long represents 185 NM. The scale of this chart is approximately:

A – 1 : 5 000 000
B – 1 : 3 500 000
C – 1 : 6 000 000
D – 1 : 7 000 000

Ref: all

Ans: D

10969. (Refer to figure 061-10)

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

Ref: all

Ans: A

10972. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from CON VOR/DME (N5354.8 W00849.1) to position N5340 W00820)?

A – 311° – 22 NM
B – 119° – 42 NM
C – 140° – 23 NM
D – 240° – 24 NM

Ref: all

Ans: C

10973. On a particular Direct Mercator wall chart, the 180W to 180E parallel of latitude at 53N is 133 cm long. What is the scale of the chart at 30S?

A – 1 : 3 000 000
B – 1 : 18 000 000
C – 1 : 21 000 000
D – 1 : 25 000 000

Ref: all

Ans: D

10974. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track (°T) and distance between SLG NDB (N5416.7 W00836.0) and CFN NDB (N5502.6 W00820.4)?

A – 191° – 45 NM
B – 020° – 46 NM
C – 348° – 46 NM
D – 011° – 47 NM

Ref: all

Ans: D

10975. 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

Ref: all

Ans: A

10976. In a navigation chart a distance of 49 NM is equal to 7 cm. The scale of the chart is approximately:

A – 1 : 130 000
B – 1 : 700 000
C – 1 : 1 300 000
D – 1 : 7 000 000

Ref: all

Ans: C

10977. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)
What is the average track (°T) and distance between WTD NDB (N5211.3 W00705.0) and SLG NDB (N5416.7 W00836.0)?

A – 344° – 139 NM
B – 336° – 137 NM
C – 156° – 136 NM
D – 164° – 138 NM

Ref: all

Ans: B

10978. 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 – 41°W
B – 36°W
C – 38°W
D – 34°W

Ref: all

Ans: D

10980. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track (°T) and distance between CON VOR (N5354.8 W00849.1) and BEL VOR (N5439.7 W00613.8)?

A – 293° – 98 NM
B – 071° – 100 NM
C – 113° – 97 NM
D – 063° – 101 NM

Ref: all

Ans: D

10981. At latitude 60°N the scale of a Mercator projection is 1:5 000 000. The length on the chart between C N60° W008° and D N60° W008° is:

A – 19.2 cm
B – 16.2 cm
C – 35.6 cm
D – 17.8 cm

Ref: all

Ans: D

10983. At 47º North the chart distanced between meridians 10º apart is 5 inches. The scale of the chart at 47º North approximates:

A – 1: 2 500 000
B – 1 : 8 000 000
C – 1 : 3 000 000
D – 1 : 6 000 000

Ref: all

Ans: D

10984. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

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 – 333º – 37 NM
B – 154º – 38 NM
C – 326º – 37 NM
D – 146º – 38 NM

Ref: all

Ans: A

10987. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track (ºM) and distance between WTD NDB (N5211.3 W00705.0) and BAL VOR (N5318.0 WS00626.9)?

A – 206º – 71 NM
B – 018º – 153 NM
C – 026º – 71 NM
D – 198º – 72 NM

Ref: all

Ans: C

10988. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

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

Ref: all

Ans: A

10989. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track and distance between BAL VOR (N5318.0 W00626.9) and CRN NDB (N5318.1 W00856.5)?

A – 278° – 89 NM
B – 270° – 90 NM
C – 268° – 91 NM
D – 272° – 89 NM

Ref: all

Ans: B

10990. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Which of the following lists all the aeronautical chart symbols shown at position N5416.7 W00836.0?

A – VOR, DME, NDB non-compulsory reporting point
B – VOR, DME, NDB, compulsory reporting point
C – civil airport, VOR, DME, non-compulsory reporting point
D – civil airport, NDB, DME, compulsory reporting point

Ref: all

Ans: D

10991.(Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from BEL VOR/DME (N5439.7 W00613.8) to position N5440 W00730?

A – 090º – 46 NM
B – 278º – 44 NM
C – 278º – 10 NM
D – 098º – 45 NM

Ref: all

Ans: B

10992. Waypoint 1 is 60N 30W. Waypoint 2 is 60N 20W. The aircraft autopilot is coupled to the INS steer. What is the latitude on passing 25W?

A – 6005N
B – 6011N
C – 6032N
D – 5949M

Ref: all

Ans: A

10997. Position A is at 70S 030W, position B is 70S 060E. What is the Great Circle track of B from A, measured at A?

A – 132T
B – 048T
C – 090T
D – 228T

Ref: all

Ans: A

11000. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)
What is the radial and DME distance from CON VOR/DME (N5354.8 W00849.1) to position N5330 W00930?

A – 165º – 27 NM
B – 233º – 35 NM
C – 335º – 43 NM
D – 025º – 38 NM

Ref: all

Ans: B

11001. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Which of the following lists all the aeronautical chart symbols shown at position N5211 W00705?

A – NDB: ILS
B – VOR: NDB
C – civil airport: ILS
D – civil airport: NDB

Ref: all

Ans: D

11002. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from BEL VOR/DME (N5439.7 W00613.8) to position N5500 W00700?

A – 126° – 33 NM
B – 296° – 65 NM
C – 315° – 34 NM
D – 222° – 48 NM

Ref: all

Ans: C

11004. (Refer to figure 061-10)

What are the initial true course and distance between positions N5800 W01300 and N6600 E00200?

A – 032° – 470 NM
B – 029° – 570 NM
C – 042° – 635 NM
D – 036° – 638 NM

Ref: all

Ans: D

11005. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

SHA VOR/DME (N5243.3 W00853.1)
Radial 232°/32 NM

What is the aircraft position?

A – N5303 W00810
B – N5305 W00815
C – N5228 W00935
D – N5220 W00930

Ref: all

Ans: D

11007. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from SHA VOR/DME (N5243.3 W00853.1) to position N5300 W00940?

A – 057° – 27 NM
B – 309° – 33 NM
C – 293° – 33 NM
D – 324° – 17 NM

Ref: all

Ans: B

11009. (Refer to Jeppesen Student Manual chart – E(LO)1 or figure 061-11)

Given:

SHA VOR (N5243.3 W00853.1) radial 223°
CRK VOR (5150.4 W00829.7) radial 322°

What is the aircraft position:

A – N5220 W00920
B – N5230 W00910
C – N5210 W00910
D – N5210 W00930

Ref: all

Ans: A

11014. An aircraft at latitude 0220N tracks 180T for 685 kilometres. What is its latitude at the end of the flight?

A – 0350S
B – 0250S
C – 0210S
D – 0850S

Ref: all

Ans: A

11015. Contour lines on aeronautical maps and charts connect points:

A – of equal latitude
B – with the same variation
C – having the same longitude
D – having the same elevation above sea level

Ref: all

Ans: D

11016. (Refer to figure 061-10)

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

Ref: all

Ans: A

11017. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What feature is shown on the chart at position N5211 W00931?

A – KERRY/Farranfore aerodrome
B – Waterford NDB
C – Connemara aerodrome
D – Punchestown aerodrome

Ref: all

Ans: A

11019. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Given:

CON VOR/DME (5354.8 W00849.1)
Castlebar aerodrome (N5351 W00917)

What is the CON radial and DME distance when overhead Castlebar aerodrome

A – 265º – 17 NM
B – 077º – 18 NM
C – 257o – 17 NM
D – 086º – 18 NM

Ref: all

Ans: A

11021. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What feature is shown on the chart at position N5417 W01005?

A – Cammore aerodrome
B – Belmullet aerodrome
C – EAGLE ISLAND LT.H. NDB
D – Clonbullogue aerodrome

Ref: all

Ans: C

11023. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)
Given:

CRN VOR (N5318.1 W00856.5) DME 34 NM
SHA VOR (N5243.3 W00853.1) DME 26 NM
Aircraft heading 090º(M)
Both DME distances increasing

What is the aircraft position?

A – N5255 W00815
B – N5250 W0030
C – N5305 W00930
D – N5310 W00820

Ref: all

Ans: A

21451. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)
Given:
SHA VOR/DME (N5243.3 W00853.1) radial 048º/22 NM

What is the aircraft position?

A – N5228 00920
B – N5300 W0830
C – N5258 W00825
D – N5225 W00917

Ref: all

Ans: B

21452. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)
Given:
SHA VOR N5243.3 W00853.1
CRK VOR N5150.4 W00829.7
Aircraft position N5230 W00930

Which of the following lists two radials that are applicable to the aircraft position?

A – SHA 068º
CRK 145º
B – SHA 060º
CRK 138º
C – SHA 240º
CRK 137º
D – SHA 248º
CRK 325º

Ref: all

Ans: D

21454. (Refer to figure 061-09)

At 1215 UTC LAJES VORTAC (38º 46'N 027º 05'W) RMI reads 178º, range 135 NM. Calculate the aircraft position at 1215 UTC:

A – 41º 00'N 028º 10'W
B – 41º 05'N 027º 50'W
C – 40º 55'N 027º 55'W
D – 40º 50'N 027º 40'W

Ref: all

Ans: C

21668. (Refer to figure 061-07)

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 – 70° 15'N 080° E
B – 80° 00'N 080°E
C – 78° 45'N 087°E
D – 79° 15'N 074°E

Ref: all

Ans: B

21669. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)
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 – 296° – 46 NM
B – 304° – 47 NM
C – 124° – 46 NM
D – 116° – 47 NM

Ref: all

Ans: C

21671. (Refer to figure 061-10)

An aircraft on radial 110o at a range of 120 NM from SAXAVORD VOR (N6050 W00050) is at position:

A – N6127 W00443
B – N6010 E00255
C – N6109 E00255
D – N6027 E00307

Ref: all

Ans: D

21672. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track (°T) and distance between SHA VOR (N5243.3 W000853.1) and CON VOR (5354.8 W00849.1)?

A – 010° – 71 NM
B – 358° – 72 NM
C – 006° – 71 NM
D – 002° – 72 NM

Ref: all

Ans: D

21674. (Refer to figure 061-06)

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

Ref: all

Ans: A

21675. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track (°M) and distance between BAL VOR (N5318.0 W00626.9) and SLG NDB (N5416.7 W00836.0)?

A – 262° – 86 NM
B – 128° – 99 NM
C – 308° – 98 NM
D – 316° – 96 NM

Ref: all

Ans: D

21676. (Refer to figure 061-06)

Complete line 4 of the 'FLIGHT NAVIGATION LOG' positions 'G' to 'H'. What is the HDG^{o} (M) and ETA?

A – HDG 344^{o} – ETA 1303 UTC
B – HDG 344^{o} – ETA 1336 UTC
C – HDG 354^{o} – ETA 1326 UTC
D – HDG 034^{o} – ETA 1336 UTC

Ref: all

Ans: B

21677. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from CRK VOR/DME (N5150.4 WS00829.7) to position N5210 W00920?

A – 350^{o} – 22 NM
B – 295^{o} – 38 NM
C – 170^{o} – 22 NM
D – 311^{o} – 38 NM

Ref: all

Ans: D

21678. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track (oM) and distance between RK VOR (N5150.4 W00829.7) and CRN NDB (N5318.1 W00856.5)?

A – 177^{o} – 92 NM
B – 357^{o} – 89 NM
C – 169^{o} – 91 NM
D – 349^{o} – 90 NM

Ref: all

Ans: B

21679. (Refer to figure 061-03)

Which of the aeronautical chart symbols indicates a VOR/DME?

A – 3
B – 1
C – 4
D – 7

Ref: all

Ans: B

21683. (Refer to figure 061-03)

Which of the aeronautical chart symbols indicates a DME?

A – 2
B – 1
C – 6
D – 3

Ref: all

Ans: A

21684. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the average track (oM) and distance between CRN NDB (N5318.1 00856.5) and WTD NDB (N5211./3 W00705.0)?

A – 135° – 96 NM
B – 322° – 95 NM
C – 142° – 95 NM
D – 315° – 94 NM

Ref: all

Ans: C

21685. (Refer to figure 061-03)

Which of the aeronautical chart symbols indicates a VOR?

A – 1
B – 2
C – 3
D – 7

Ref: all

Ans: C

21686. (Refer to figure 061-03)

Which of the aeronautical chart symbols indicates an NDB?

A – 5
B – 4
C – 2
D – 3

Ref: all

Ans: B

21687. (Refer to figure 061-03)

Which of the aeronautical chart symbols indicates a basic, non-specified, navigation aid?

A – 5
B – 4
C – 2
D – 6

Ref: all

Ans: A

21688. (Refer to figure 061-03)

Which of the aeronautical chart symbols indicates a VORTAC?

A – 6
B – 7
C – 3
D – 5

Ref: all

Ans: B

21689. (Refer to figure 061-01)

Which aeronautical chart symbol indicates a flight Information Region (FIR) boundary?

A – 1
B – 3
C – 4
D – 5

Ref: all

Ans: A

21690. (Refer to figure 061-01)

Which aeronautical chart symbol indicates a Control Zone boundary?

A – 2
B – 3
C – 4
D – 5

Ref: all

Ans: B

21691. (Refer to figure 061-03)

Which of the aeronautical chart symbols indicates a TACAN?

A – 6
B – 7
C – 3
D – 1

Ref: all

Ans: A

21693. (Refer to figure 061-01)

Which aeronautical chart symbol indicates a group of unlighted obstacles?

A – 9
B – 10
C – 11
D – 12

Ref: all

Ans: C

21694. (Refer to figure 061-01)

Which aeronautical chart symbol indicates a group of lighted obstacles?

A – 9
B – 10
C – 11
D – 12

Ref: all

Ans: D

21695. (Refer to figure 061-01)

Which aeronautical chart symbol indicates an exceptionally high unlighted obstacle?

A – 13
B – 6
C – 9
D – 12

Ref: all

Ans: A

21696. (Refer to figure 061-01)

Which aeronautical chart symbol indicates an exceptionally high lighted obstacle?

A – 14
B – 13
C – 12
D – 16

Ref: all

Ans: A

21697. (Refer to figure 061-01)

What is the meaning of aeronautical chart symbol number 16?

A – Shipwreck showing above the surface at low tide
B – Off-shore lighthouse
C – Lightship
D – Off-shore helicopter landing platform

Ref: all

Ans: C

21698. (Refer to figure 061-01)

Which aeronautical chart symbol indicates a lightship?

A – 12
B – 10
C – 15
D – 16

Ref: all

Ans: D

21701. (Refer to figure 061-01)

Which aeronautical chart symbol indicates a lighted obstacle?

A – 9
B – 10
C – 15
D – 16

Ref: all

Ans: B

21703. (Refer to figure 061-01)

Which aeronautical chart symbol indicates an unlighted obstacle?

A – 9
B – 10
C – 8
D – 15

Ref: all

Ans: A

21704. (Refer to figure 061-01)
Which aeronautical chart symbol indicates a Waypoint?

A – 15
B – 6
C – 7
D – 8

Ref: all

Ans: D

21705. (Refer to figure 061-01)

Which aeronautical chart symbol indicates a compulsory reporting point?

A – 8
B – 15
C – 6
D – 7

Ref: all

Ans: D

21706. (Refer to figure 061-01)

Which aeronautical chart symbol indicates a non-compulsory reporting point?

A – 15
B – 6
C – 7
D – 8

Ref: all

Ans: B

21707. (Refer to figure 061-01)

Which aeronautical chart symbol indicates the boundary of advisory airspace?

A – 2
B – 3
C – 4
D – 5

Ref: all

Ans: D

21708. (Refer to figure 061-01)
Which aeronautical chart symbol indicates an uncontrolled route?

A – 3
B – 4
C – 5
D – 2

Ref: all

Ans: B

24000. (Refer to figure 061-01)

What is the meaning of aeronautical chart symbol number 15?

A – Aeronautical ground light
B – Visual reference point
C – Hazard to aerial navigation
D – Lighthouse

Ref: all

Ans: A

24001. (Refer to figure 061-01)

Which aeronautical chart symbol indicates an aeronautical ground light?

A – 14
B – 16
C – 10
D – 15

Ref: all

Ans: D

25189. Determine the distance between points A (N4500.0 E01000.0) and B (N4500.0 W00500.0) is:

A – 300 nm
B – 636.4 nm
C – 900 nm
D – 212.1 nm

Ref: all

Ans: B

25225. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

SHA VOR (5243N 00853W) 205° radial
CRK VOR (5150N 00829W) 317° radial

What is the position of the aircraft?

A – 5210N 00910W
B – 5118N 00913W
C – 5205N 00915W
D – 5215N 00917W

Ref: all

Ans: A

25226. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

SHA VOR (5243N 00853W) DME 41 nm
CRK VOR (5150N 00829W) DME 30 nm

What is the position of the aircraft?

A – 5215N 00805W
B – 5205N 00915W
C – 5215N 00915W
D – 5225N 00810W

Ref: all

Ans: A

25255. How is a non-controlled route marked on a map/chart?

A – As a solid line
B – As a dashed line
C – As an alternate dotted/dashed line
D – As a dotted line

Ans: B

25282. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Your radial from the SHA VOR (5243N 00853W) is 120º M. From CRK VOR (5151N 00830W) 033º M. What is your position?

A – 5320N 00800W
B – 5240N 00821W
C – 5220N 00821W
D – 5230N 00800W

Ref: all

Ans: D

25301. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from CRK VOR (5151N 00830W) to position 5220N 00910W?

A – 322 M 39 nm
B – 330 M 41 nm
C – 330 M 39 nm
D – 322 M 41 nm

Ref: all

Ans: C

25302. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from SHA VOR (5243N 00853W) to BIRR airport (5311N 00754W)?

A – 068 M 42 nm
B – 060 M 40 nm
C – 068 M 40 nm
D – 060 M 42 nm

Ref: all

Ans: A

25303. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the lat and long of the SHA VOR (5243N 00853W) 239M/36nm radial/range?

A – 5215N 00930W
B – 5220N 00937W
C – 5212N 00930W
D – 5212N 00915W

Ref: all

Ans: B

25569. (Refer to figure 061-10)

Which of the following beacons is 185 NM from AKRABERG (N6124 W00640)?

A – KIRKWALL (N5858 W00254)
B – STORNOWAY (N5815 W00617)
C – SUMBURGH (N5955 W00115)
D – SAXAVORD (N6050 W00050)

Ref: all

Ans: C

061-04 DEAD RECKONING NAVIGATION (DR)

061-04-01 Basics of dead reckoning

8297. 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°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8299. The rhumb-line distance between points A (60°00N 002°30E) and B (60°00N 007°30W) is:

A – 150 NM
B – 450 NM
C – 600 NM
D – 300 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8562. An aircraft is climbing at a constant CAS in ISA conditions. What will be the effect on TAS and Mach No?

A – TAS increases and Mach No decreases
B – Both increase
C – Both decrease
D – TAS decreases and Mach No increases

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8570. Heading is 156°T, TAS is 320 knots, W/V is 130°/45. What is your true track?

A – 160
B – 152
C – 104
D – 222

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8574. The ICAO definition of ETA is the:

A – actual time of arrival at a point or fix
B – estimated time of arrival at destination
C – estimated time of arrival at an en-route point or fix
D – estimated time en route

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8601. Given:
True track: 192°
Magnetic variation: 7°E
Drift angle: 5° left
What is the magnetic heading required to maintain the given track?

A – 190°
B – 194°
C – 204°
D – 180°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8619. Given:

True course A to B = 250º
Distance A to B = 315 NM
TAS = 450 kt
W/V = 200º/60 kt
ETD A – 0650 UTC
What is the ETA at B?

A – 0730 UTC
B – 0736 UTC
C – 0810 UTC
D – 0716 UTC

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

9734. An aircraft passes position A (60º00N 120º00W) on route to position B (60º00N 140º30W). What is the great circle track on departure from A?

A – 261º
B – 288º
C – 279º
D – 270º

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

9736. 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 – 60 NM and 30 NM
B – 52 NM and 60 NM
C – 30 NM and 60 NM
D – 60 NM and 52 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

9800. What is the longitude of a position 6 NM to the east of 58°42N 094°00W?

A – 093°53.1W
B – 093°54.0W
C – 093°48.5W
D – 094°12.0W

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

9815. Given:
Position A is N00° E100°
Position B is 240°(T), 200 NM from A
What is the position of B?

A – S01°40 E101°40
B – N01°40 E097°07
C – S01°40 E097°07
D – N01°40 E101°40

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

10929. The rhumb line track between position A (45°00N, 010°00W) and position B (48°30N, 015°00W) is approximately:

A – 345
B – 300
C – 330
D – 315

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

10945. What is the time required to travel along the parallel of latitude 60°N between meridians 010°E and 030°W at a ground speed of 480 kt?

A – 1 HR 45 MIN
B – 1 HR 15 MIN
C – 2 HR 30 MIN
D – 5 HR 00 MIN

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

11059. Given the following:
Magnetic heading: 060°
Magnetic variation: 8°W
Drift angle: 4° right
What is the true track?

A – 048°
B – 064°
C – 056°
D – 072°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

11067. An aircraft has a TAS of 300 knots and is over a stretch of water between 2 airfields 500 nm apart. If the wind component is 60 knots head, what is the distance from the first airfield to the critical point?

A – 250 nm
B – 200 nm
C – 300 nm
D – 280 nm

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

14649. An aircraft departs from position A (04°10S 178°22W) 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 co-ordinates of position B are?

A – 53°20 N 172°38 E
B – 45°00 N 172°38 E
C – 53°20 N 169°22 W
D – 45°00 N 169°22 W

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

14652. 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 – 225°
B – less than 225°
C – more or less than 225° depending on the pendulous suspension used
D – more than 225°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

15421. 5 HR 20 MIN 20 SEC corresponds to a longitude difference of:

A – 75°00
B – 78°45
C – 80°05
D – 81°10

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

15422. What is the ration between the litre and the US gallon?

A – 1 US-GAL equals 4.55 litres
B – 1 litre equals 4.55 US-GAL
C – 1 US-GAL equals 3.78 litres
D – 1 litre equals 3.78 US-GAL

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

15424. What is the ISA temperature value at FL 330?

A - -56°C
B - -66°C
C - -81°C
D - -51°C

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

16274. An aircraft leaves 0°N/S 45°W and flies due south for 10 hours at a speed of 540 kts. What is its position?

A – South pole
B – North pole
C – 30°S
D – 45°S

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

16275. An aircraft leaves 0°N/S 45°W and flies due south for 10 hours at a speed of 540 kts. What is its position as a true bearing from the south pole?

A – 30°T
B – 000°T
C – 45°T
D – 60°T

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

16278. You are flying from A (50N 10W) to B (58N 02E). If initial Great circle track is 047°T what is Final Great circle track?

A – 57°
B – 52°
C – 43°
D – 29°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

16280. You are flying from A (30S 20E) to B (30S 20W). What is the RL track from A to B?

A – 250° (T)
B – 270° (T)
C – 290° (T)
D – 300° (T)

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

16281. You are flying from A (30S 20E) to B (30S 20W). What is the initial GC track?

A – 260° (T)
B – 270° (T)
C – 290° (T)
D – 300° (T)

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

24012. An aircraft is flying at FL 180 and the outside air temperature is -30°C. If the CAS is 150 kt, what is the TAS?

A – 115 kt
B – 195 kt
C – 180 kt
D – 145 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

24015. Calibrated Airspeed (CAS) is indicated Airspeed (IAS) corrected for:

A – density
B – temperature and pressure error
C – compressibility error
D – instrument error and position error

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24025. If the Compass Heading is 265° variation is 33°W and deviation is 3°E, what is the True Heading?

A – 229°
B – 235°
C – 301°
D – 295°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

24026. If the chart scale is 1 : 500 000, what earth distance would be represented by 7 cm on the chart?

A – 35 NM
B – 3.5 km
C – 35 000 m
D – 0.35 km

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

24031. In the Northern Hemisphere the rhumb line track from position A to B is 230°, the convergency is 6° and the difference in longitude is 10°. What is the initial rhumb line track from B to A?

A – 050°
B – 053°
C – 056°
D – 047°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

24036. On a Direct Mercator projection a particular chart length is measured at 30°N. What earth distance will the same chart length be if measured at 60°N?

A – A larger distance
B – Twice the distance
C – The same distance
D – A smaller distance

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24045. The Great Circle bearing from A (70°S 030°W) to B (70°S 060°E) is approximately:

A – 090° (T)
B – 048° (T)
C – 132° (T)
D – 312° (T)

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

24046. The great circle bearing of position B from position A in the Northern Hemisphere is 040°. If the Conversion Angle is 4°, what is the great circle bearing of A from B?

A – 228°
B – 212°
C – 220°
D – 224°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

24047. The great circle track measured at A (45°00'N 010°00'W) from A to B (45°00'N 019°00'W) is approximately:

A – 270°
B – 090°
C – 273°
D – 093°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

24049. The initial great circle track from A to B is 080° and the rhumb line track is 083°. What is the initial great circle track from B to A and in which Hemisphere are the two positions located?

A – 266° and in the northern hemisphere
B – 260° and in the southern hemisphere
C – 260° and in the northern hemisphere
D – 266° and in the southern hemisphere

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

25152. A flight is planned from A (N37000' E/W000000') to B (N46000' E/W000000'). The distance in kilometres from A to B is approximately:

A – 540
B – 794
C – 1000
D – 1771

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25155. Given:
Variation 7°W
Deviation 4°E
If the aircraft is flying a Compass heading of 270, the True and Magnetic Headings are:

A – 274° (T) 267° (M)
B – 267° (T) 274° (M)
C – 277° (T) 281° (M)
D – 263° (T) 259° (M)

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

25188. Given:
True track 140°
Drift 8°S
Variation 9°W
Deviation 2°E
What is the compass heading?

A – 147° (C)
B – 155° (C)
C – 139° (C)
D – 125° (C)

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25213. On a chart, 49 nm is represented by 7.0 cm; the scale of the chart is:

A – 1:700 000
B – 1:2 015 396
C – 1:1 296 400
D – 1: 156 600

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25219. The distance Q to R is 3016 nm; TAS is 480 kts. Flying outbound Q to R the head wind component is calculated as 90 kts and the tail wind component R to Q is 75 kts. Leaving Q at 1320 UTC, what is the ETA at the point of Equal Time:

A – 1631 UTC
B – 1802 UTC
C – 1702 UTC
D – 1752 UTC

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

061-04-02 Use of the navigational computer

8255. Airfield elevation is 1000 feet. The QNH is 988. Use 27 feet per millibar. What is pressure altitude?

A – 675
B – 325
C – 1675
D – 825

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8526. Given:
True course 300°
Drift 8°R
Variation 10°W
Deviation -4°
Calculate the compass heading?

A – 306°
B – 322°
C – 294°
D – 278°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8531. 265 US-GAL equals? (Specific gravity 0.80)

A – 862 kg
B – 803 kg
C – 895 kg
D – 940 kg

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8532. Ground speed is 540 knots. 72 nm to go. What is time to go?

A – 8 mins
B – 9 mins
C – 18 mins
D – 12 mins

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8543. The relative bearing to a beacon is 270ºR. Three minutes later, at a ground speed of 180 knots, it has changed to 225ºR. What was the distance of the closest point of approach of the aircraft to the beacon?

A – 45 nm
B – 18 nm
C – 9 nm
D – 3 nm

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8545. An aeroplane flying at 180 kts TAS on a track of 090º. The wind is 045º/50 kts. The distance the aeroplane can fly out and return in one hour is:

A – 88 NM
B – 85 NM
C – 56 NM
D – 176 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8549. Given:
GS = 122 kt
Distance from A to B = 985 NM
What is the time from A to B?

A – 7 HR 48 MIN
B – 8 HR 04 MIN
C – 7 HR 49 MIN
D – 8 HR 10 MIN

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8554. Given:
IAS 120 kt
FL 80
OAT +20ºC
What is the TAS?

A – 132 kt
B – 102 kt
C – 120 kt
D – 141 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8557. The wind velocity is 359/25. An aircraft is heading 180 at a TAS of 198 knots. (All directions are True). What is its track and ground speed?

A – 180.223
B – 179.220
C – 180.220
D – 179.223

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8558. Given:
GS = 480 kt
Distance from A to B = 5360 NM
What is the time from A to B?

A – 11 HR 07 MIN
B – 11 HR 06 MIN
C – 11 HR 10 MIN
D – 11 HR 15 MIN

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8560. You are flying 090°C heading. Deviation is 2°W and Variation is 12E. Your TAS is 160 knots. You are flying the 070 radial outbound from a VOR and you have gone 14 nm in 6 minutes. What is the W/V?

A – 158°T/51
B – 060°T/50
C – 340°T/25
D – 055°T/25

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8564. Given:
GS = 236 kt
Distance from A to B = 354 NM
What is the time from A to B?

A – 1 HR 09 MIN
B – 1 HR 30 MIN
C – 1 HR 10 MIN
D – 1 HR 40 MIN

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8566. Given:
GS = 510 kt
Distance A to B = 43 NM
What is the time (MIN) from A to B?

A – 6
B – 4
C – 5
D – 7

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8568. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8578. On a particular take-off, you can accept up to 10 knots tailwind. The runway QDM is 047, the variation is 17E and the ATIS gives the wind direction as 210. What is the maximum wind strength you can accept?

A – 18 knots
B – 11 knots
C – 8 knots
D – 4 knots

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8584. Given:

Course 040º(T)
TAS is 120 kt
Wind speed 30 kt
Maximum drift angle will be obtained for a wind direction of:

A – 120º
B – 145º
C – 115º
D – 130º

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8587. G/S = 240 knots, Distance to go = 500 nm. What is time to go?

A – 20 minutes
B – 29 minutes
C – 2 h 05 m
D – 2 h 12 m

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8588. Given:

True track 070º
Variation 30ºW
Deviation +1º
Drift 10ºR
Calculate the compass heading?

A – 100º
B – 091º
C – 089º
D – 101º

Ref: AIR: atpl, cpl; HELI: atpl, cpl

ANS: C

8594. Pressure Altitude is 27,000 feet, OAT = -35C, Mach No = 0.45
W/V = 270/85, Track = 200T
What is drift and ground speed?

A – 18L/252 knots
B – 15R/310 knots
C – 17L/228 knots
D – 17R/287 knots

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8596. If the true track from A to B is 090°, TAS is 460 knots, wind velocity is 360°/100 kts, variation is 10°E and deviation is -20; calculate the compass heading and ground speed.

A – 069° and 448 kts
B – 068° and 460 kts
C – 078° and 450 kts
D – 070° and 453 kts

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8597. Given:
True track 180°
Drift 8°R
Compass heading 195°
Deviation -2°
Calculate the variation?

A – 25°W
B – 21°W
C – 5°W
D – 9°W

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8606. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8614. An aircraft travels 2.4 statute miles in 47 seconds. What is the ground speed?

A – 183 kt
B – 160 kt
C – 209 kt
D – 131 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8615. At 1000 hours an aircraft is on the 310 radial from a VOR/DME, at 10 nautical miles range. At 1010 the radial and range are 040/10 nm. What is the aircraft's track and ground speed?

A – 080 / 85 knots
B – 085 / 85 knots
C – 080 / 80 knots
D – 085 / 90 knots

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8618. How long will it take to fly 5 NM at a ground speed of 269 kt?

A – 1 MIN 07 SEC
B – 1 MIN 55 SEC
C – 2 MIN 30 SEC
D – 0 MIN 34 SEC

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8621. Given:
GS = 135 kt
Distance from A to B = 433 NM
What is the time from A to B?

A – 3 HR 20 MIN
B – 3 HR 25 MIN
C – 3 HR 19 MIN
D – 3 HR 12 MIN

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

10930. An aircraft is landing on runway 23 (QDM 227°), surface wind 180°/30 kts from ATIS; variation is 13°E. The cross wind component on landing is:

A – 26 kts
B – 23 kts
C – 20 kts
D – 15 kts

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11037. Given:
GS = 105 kt
Distance from A to B = 103 NM
Whatis the time from A to B?

A – 01 HR 01 MIN
B – 00 HR 57 MIN
C – 00 HR 58 MIN
D – 00 HR 59 MIN

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

11038. Given:
GS – 95 kt
Distance from A to B =- 480 NM
What is the time from A to B?

A – 4 HR 59 MIN
B – 5 HR 03 MIN
C – 05 HR 00 MIN
D – 5 HR 08 MIN

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11043. You leave A to fly to B, 475 nm away, at 1000 hours. Your ETA at B is 1130. At 1040 you are 190 nm from A. What ground speed is required to arrive on time at B?

A – 317 knots
B – 330 knots
C – 342 knots
D – 360 knots

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

11046. An aircraft travels 100 statute miles in 20 MN, how long does it take to travel 215 NM?

A – 50 MIN
B – 100 MIN
C – 90 MIN
D – 80 MIN

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11054. The equivalent of 70 m/sec is approximately:

A – 145 kt
B – 136 kt
C – 210 kt
D – 35 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11060. Given:
Required course 045º(M)
Variation is 15ºE
W/V is 190º(T)/30 kt
CAS is 120 kt at FL 55 in standard atmosphere
What are the heading (ºM) and GS?

A – 036º and 151 kt
B – 055º and 147 kt
C – 052º and 154 kt
D – 056º and 137 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11061. Given:
GS = 435 kt
Distance from A to B = 1920 NM
What is the time from A to B?

A – 4 HR 10 MIN
B – 3 HR 25 MIN
C – 3 HR 26 MIN
D – 4 HR 25 MIN

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

11069. Given:
True track: 352º
Variation 11ºW
Deviation is -5º
Drift 10ºR
Calculate the compass heading?

A – 358º
B – 346º
C – 018º
D – 025º

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11075. Given:
True course from A to B = 090°
TAS = 460 kt
W/V = 360/100 kt
Average variation = 10°E
Deviation = -2°
Calculate the compass heading and GS?

A – 078° – 450 kt
B – 068° – 460 kt
C – 069° – 448 kt
D – 070° – 453 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

11080. 730 FT/MIN equals:

A – 3.7 m/sec
B – 5.2 m/sec
C – 1.6 m/sec
D – 2.2 m/sec

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11082. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11085. How many NM would an aircraft travel in 1 MIN 45 SEC if GS is 135 kt?

A – 39.0
B – 2.36
C – 3.25
D – 3.94

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

15427. Given:
FL 250
OAT -15ºC
TAS 250 kt
Calculate the Mach No?

A – 0.44
B – 0.40
C – 0.39
D – 0.42

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

15429. Given:
TAS = 225 kt
HDG (ºT) – 123º
W/V – 090/60 kt
Calculate the Track (ºT) and GS?

A – 134 – 178 kt
B – 134 – 188 kt
C – 120 – 190 kt
D – 123 – 180 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

15430. Given:
TAS = 170 kt
HDG (T) = 100º
W/V – 350/30 kt
Calculate the Track (ºT) and GS?

A – 098 – 178 kt
B – 109 – 182 kt
C – 091 – 183 kt
D – 103 – 178 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

15432. Given:
TAS – 230 kt
HDG (T) – 250º
W/V m 205/10 kt
Calculate the drift and GS?

A – 1L – 225 kt
B – 1R – 221 kt
C – 2R – 223 kt
D – 2L – 224 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

15433. Given:
True HDG = 145º
TAS – 240 kt
Track (T) – 150º
GS – 210 kt
Calculate the W/V?

A – 360/35 kt
B – 180/35 kt
C – 295/35 kt
D – 115/35 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

21702. Given:
True altitude 9000 FT
OAT -32ºC
CAS 200 kt
What is the TAS?

A – 215 kt
B – 200 kt
C – 210 kt
D – 220 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24016. Given:
True Track = 095°
TAS = 160 kt
True Heading = 087°
GS = 130 kts
Calculate W/V

A – 124°/36 kt
B – 237°/36 kt
C – 307°/36 kt
D – 057°/36 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24017. Given:

True Track	239°
True Heading	229°
TAS	555 kt
G/S	577 kt

Calculate the wind velocity.

A – 300°/100 kt
B – 310°/100 kt
C – 130°/100 kt
D – 165°/100 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

24018. Given:

True Track	245°
Drift	5° right
Variation	3° E
Compass Hdg	242°

Calculate the deviation.

A – 11° E
B – 1° E
C – 5° E
D – 5° W

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24053. True Heading of an aircraft is 265° and TAS is 290 kt. If W/V is 210°/35kt, what is True Track and GS?

A – 259° and 305 kt
B – 259° and 272 kt
C – 260° and 315 kt
D – 271° and 272 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

25129. Course 040°T, TAS 120 kt, Wind speed 30 knots. From which direction will the wind give the greatest drift:

A – 215°
B – 230°T
C – 235°T
D – 240°T

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

25130. Required course 045°T, W/V = 190/30, FL 55, ISA, Variation 15°E, CAS 120 knots. What is the magnetic heading and G/S?

A – 052°M 154
B – 067°M 154
C – 037°M 154
D – 037°M 113

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25224. Given:
Pressure Altitude = 5000 ft
OAT = +35C
What is true altitude:

A – 4550 ft
B – 5550 ft
C – 4290 ft
D – 5320 ft

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

25228. Given:
Pressure Altitude 29 000 ft
OAT -55°C
What is the density altitude:

A – 27 500 ft
B – 31 000 ft
C – 33 500 ft
D – 36 000 ft

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

25229. If the headwid component is 50 kt, the FL is 330, temperature JSA -7°C and the ground speed is 496 kt, the Mach No. is:

A – 0.98
B – 0.78
C – 0.95
D – 0.75

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

061-04-03 The Triangle of velocities; methods of solution

8527. Given:
True Heading = 090°
TAS = 180 kt
GS = 180 kt
Drift 5° right
Calculate the W/V?

A – 360° / 15 kt
B – 190° / 15 kt
C – 010° / 15 kt
D – 180° / 15 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8529. Given:

FL 120
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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8530. 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 – 12 kt and 38 kt
B – 20 kt and 40 kt
C – 15 kt and 43 kt
D – 18 kt and 50 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8533. 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 – 15 kt
B – 18 kt
C – 8 kt
D – 11 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8534. Given:
Runway direction 083º(M)
Surface W/V 035/35 kt
Calculate the effective headwind component?

A – 24 kt
B – 27 kt
C – 31 kt
D – 34 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8535. An aircraft is following a true track of 048º at a constant TAS of 210 kt. The wind velocity is 350º/30 kt. The GS and drift angle are:

A – 192 kt, 7º left
B – 200 kt – 3.5º right
C – 195 kt, 7º right
D – 225 kt, 7º left

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8536. Given:
Runway direction 230º(T)
Surface W/V 280º(T)/40 kt
Calculate the effective cross-wind component?

A – 21 kt
B – 36 kt
C – 31 kt
D – 26 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8538. Given:

TAS = 485 kt
True HDG = 226°
W/V = 110°(T)/95 kt
Calculate the drift angle and GS?

A – 7°R – 531 ktg
B – 9°R – 533 kt
C – 9°R – 433 kt
D – 8°L – 435 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8542. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8546. Given:
True HDG = 307°
TAS = 230 kt
Track (T) = 313°
GS = 210 kt
Calculate the W/V?

A – 255/25 kt
B – 257/35 kt
C – 260/30 kt
D – 265/30 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8547. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8551. Given:

TAS = 190 kt
True HDG = 085°
W/V = 110°(T)/50 kt
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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8553. Given:

TAS = 95 kt
HDG (T) = 075°
W/V = 310/20 kt
Calculate the drift and GS?

A – 9R – 108 kt
B – 10L – 104 kt
C – 9L – 105 kt
D – 8R – 104 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8559. Given:

TAS = 132 kt
True HDG = 257°
W/V = 095°(T)/35 kt
Calculate the drift angle and GS?

A – 2°R – 166 kt
B – 4°R – 165 kt
C – 4°L – 167 kt
D – 3°L – 166 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8563. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8569. Given:

True HDG = 002°
TAS = 130 kt
Track (T) = 353°
GS = 132 kt
Calculate the W/V?

A – 088/15 kt
B – 095/20 kt
C – 088/20 kt
D – 093/25 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8572. Given:
TAS = 235 kt
HDG (T) = 076°
W/V = 040/40kt
Calculate the drift angle and GS?

A – 5R – 207 kt
B – 7L – 269 kt
C – 5L – 255 kt
D – 7R – 204 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8573. Given:
TAS = 205 kt
HDG (T) = 180°
W/V = 240/25 kt
Calculate the drift and GS?

A – 7L – 192 kt
B – 6L – 194 kt
C – 3L – 190 kt
D – 4L – 195 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8580. Given:
True HDG = 133°
TAS = 225 kt
Track (T) = 144°
GS = 206 kt
Calculate the W/V?

A – 070/40 kt
B – 075/45 kt
C – 070/45 kt
D – 075/50 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8581. Given:
TAS = 90 kt
HDG (T) = 355°
W/V = 120/20 kt
Calculate the Track (°T) and GS?

A – 006 – 95 kt
B – 346 – 102 kt
C – 358 – 101 kt
D – 359 – 102 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8583. Given:
True Heading = 090°
TAS = 200 kt
W/V = 220°/30 kt
Calculate the GS?

A – 180 kt
B – 230 kt
C – 220 kt
D – 200 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8585. 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 – 165°/25 kt
B – 340°/25 kt
C – 340°/98 kt
D – 160°/50 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8586. Given:

TAS = 140 kt
HDG (T) = 005°
W/V = 265/25 kt
Calculate the drift and GS?

A – 11R – 140 kt
B – 9R – 140 kt
C – 11R – 142 kt
D – 10R – 146 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8592. Given:

TAS = 140 kt
True HDG = 302°
W/V = 045°(T)/45 kt
Calculate the drift angle and GS?

A – 9°R – 143 kt
B – 16°L – 156 kt
C – 9°L – 146 kt
D – 18°R – 146 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8595. Given:

TAS = 465 kt
Track (T) = 007°
W/V = 300/80 kt
Calculate the HDG (°T) and GS?

A – 000 – 430 kt
B – 001 – 432 kt
C – 358 – 428 kt
D – 357 – 430 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8600. Given:

Maximum allowabl crosswind component is 20 kt
Runway 06
RWY QDM 063°(M)
Wind direction 100°(M)
Calculate the maximum allowable windspeed?

A – 26 kt
B – 31 kt
C – 33 kt
D – 25 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8602. Given:

TAS = 472 kt
True HDG = 005°
W/V = 110°(T)/50 kt
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

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8605. Given:

Course required = 085° (T)
Forecast W/V 030/100 kt
TAS = 470 kt
Distance = 265 NM
Calculate the true HDG and flight time?

A – 096°, 29 MIN
B – 076°, 34 MIN
C – 075°, 39 MIN
D – 095°, 31 MIN

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8607. Given:
TAS = 200 kt
Track (T) = 073º
W/V = 210/20 kt
Calculate the HDG (ºT) and GS?

A – 077 – 214 kt
B – 079 – 211 kt
C – 075 – 213 kt
D – 077 – 210 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8608. Given:
TAS = 132 kt
HDG (T) = 053º
W/V = 205/15 kt
Calculate the track (ºT) and GS?

A – 057 – 144 kt
B – 050 – 145 kt
C – 052 – 143 kt
D – 051 – 144 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8609. Given:
TAS = 270 kt
True HDG = 145º
Actual wind = 205º(T)/30 kt
Calculate the drift angle and GS?

A – 8ºR – 261 kt
B – 6ºR – 251 kt
C – 6ºL – 256 kt
D – 6ºR – 259 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8610. Given:

TAS = 227 kt
Track (T) = 316º
W/V = 205/15 kt
Calculate the HDG (ºT) and GS?

A – 313 – 235 kt
B – 311 – 230 kt
C – 312 – 232 kt
D – 310 – 233 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8616. Given:

TAS = 220 kt
Magnetic course = 212º
W/V 160º (M)/50 kt
Calculate the GS?

A – 186 kt
B – 290 kt
C – 246 kt
D – 250 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8620. Given:

Runway direction 305º(M)
Surface W/V 260º(M)/30 kt
Calculate the cross-wind component?

A – 18 kt
B – 24 kt
C – 27 kt
D – 21 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

11024. Given:
TAS = 470 kt
True HDG = 317°
W/V = 045°(T)/45 kt
Calculate the drift angle and GS

A – 3°R – 470 kt
B – 5°L – 270 kt
C – 5°L – 475 kt
D – 5°R – 475 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11025. Given:
True HDG = 074°
TAS = 230 kt
Track (T) = 066°
GS = 242 kt
Calculate the W/V

A – 180/30 kt
B – 180/35 kt
C – 185/35 kt
D – 180/40 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11026. Given:
TAS = 155 kt
HDG (T) = 216°
W/V = 090/60 kt
Calculate the track (°T) and GS?

A – 224 – 175 kt
B – 231 – 196 kt
C – 222 – 181 kt
D – 226 – 186 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11029. An aeroplane is flying at TAS 180 kt on a track of 090°. The W/V is 045°/50 kt. How far can the aeroplane fly out from its base and return in one hour?

A – 56 NM
B – 88 NM
C – 85 NM
D – 176 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

11030. Given:
TAS = 370 kt
True HDG = 181°
W/V = 095°(T)/35 kt
Calculate the true track and GS?

A – 186 – 370 kt
B – 176 – 370 kt
C – 192 – 370 kt
D – 189 – 370 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11032. Given:
Magnetic heading = 255°
VAR = 40°W
GS = 375 kt
W/V = 235°(T)/120 kt
Calculate the drift angle?

A – 7° left
B – 7° right
C – 9° left
D – 16° right

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11033. Given:
True HDG = 054°
TAS = 450 kt
Track (T) = 059°
GS = 416 kt
Calculate the W/V?

A – 010/55 kt
B – 005/50 kt
C – 010/50 kt
D – 010/45 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

11034. Given:
TAS = 485 kt
HDG (T) = 168°
W/V = 130/75 kt
Calculate the Track (°T) and GS?

A – 175 – 432 kt
B – 173 – 424 kt
C – 175 – 420 kt
D – 174 – 428 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

11036. Given:
TAS = 190 kt
HDG (T) = 355°
W/V = 165/25 kt
Calculate the drift and GS?

A – 1R – 165 kt
B – 1L – 225 kt
C – 1R – 175 kt
D – 1L – 215 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

11039. Given:
Magnetic track = 315°
HDG = 301° (M)
VAR = 5°W
TAS = 225 kt
The aircraft flies 50 NM in 12 MIN. Calculate the W/V (°T)?

A – 195°/63 kt
B – 355°/15 kt
C – 195°/61 kt
D – 190°/63 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

11041. Given:
TAS = 155 kt
Track (T) = 305°
W/V = 160/18 kt
Calculate the HDG (°T) and GS?

A – 301 – 169 kt
B – 305 – 169 kt
C – 309 – 170 kt
D – 309 – 141 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11042. Given:
True Heading = 180°
TAS = 500 kt
W/V 225°/100 kt
Calculate the GS?

A – 450 kt
B – 600 kt
C – 535 kt
D – 435 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

11047. For a given track the:
Wind component = 45 kt
Drift angle = 15° left
TAS = 240 kt
What is the wind component on the reverse track?

A - -55 kt
B - -65 kt
C - -45 kt
D - -35 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11048. 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 aircrafts heading (°M) should be:

A – 322°
B – 328°
C – 316°
D – 326°

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11049. Given:
TAS = 270 kt
Track (T) = 260°
W/V = 275/30 kt
Calculate the HDG (°T) and GS?

A – 264 – 237 kt
B – 262 – 237 kt
C – 264 – 241 kt
D – 262 – 241 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

11052. Given:
True HDG = 233º
TAS = 480 kt
Track (T) = 240º
GS = 523 kt
Calculate the W/V?

A – 115/70 kt
B – 110/75 kt
C – 110/80 kt
D – 105/75 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11053. Given:
Runway direction 210º(M)
Surface W/V 230º (M)/30 kt
Calculate the crosswind component?

A – 19 kt
B – 10 kt
C – 16 kt
D – 13 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11055. Given:
True HDG = 035º
TAS = 245 kt
Track (T) = 046º
GS = 220 kt
Calculate the W/V?

A – 335/55 kt
B – 335/45 kt
C – 340/50 kt
D – 340/45 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

11057. Given:
Magnetic track = 075º
HDG = 066º(M)
VAR = 11ºE
TAS = 275 kt
Aircraft flies 48 NM in 10 MIN. Calculate the true W/V?

A – 340º/45 kt
B – 320º/50 kt
C – 210º/15 kt
D – 180º/45 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11062. Given:
TAS = 480 kt
HDG (ºT) = 040º
W/V = 090/60 kt
Calculate the Track (ºT) and GS?

A – 032 – 425 kt
B – 028 – 415 kt
C – 034 – 445 kt
D – 036 – 435 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

11063. Given:
TAS = 125 kt
True HDG = 355º
W/V = 320º(T)/30 kt
Calculate the true track and GS?

A – 002 – 98 kt
B – 345 – 100 kt
C – 348 – 102 kt
D – 005 – 102 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

11064. Given:
True HDG = 206°
TAS = 140 kt
Track (T) = 207°
GS = 135 kt
Calculate the W/V?

A – 180/10 kt
B – 000/05 kt
C – 000/10 kt
D – 180/05 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

11066. Given:
True heading = 310°
TAS = 200 kt
GS = 176 kt
Drift angle 7° right
Calculate the W/V?

A – 090°/33 kt
B – 360°/33 kt
C – 270°/33 kt
D – 180°/33 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

11068. Given:
TAS = 135 kt
HDG = (°T) = 278
W/V = 140/20 kt
Calculate the Track (°T) and GS?

A – 279 – 152 kt
B – 283 – 150 kt
C – 282 – 148 kt
D – 275 – 150 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11072. Given:
TAS = 465 kt
HDG (T) = 124°
W/V = 170/80 kt
Calculate the drift and GS?

A – 8L – 415 kt
B – 3L – 415 kt
C – 4L – 400 kt
D – 6L – 400 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11076. Given:
TAS = 130 kt
Track (T) = 003°
W/V = 190/40 kt
Calculate the HDG (°T) and GS?

A – 002 – 173 kt
B – 001 – 170 kt
C – 359 – 166 kt
D – 357 – 168 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11077. Given:
TAS = 375 kt
True HDG = 124°
W/V = 130°(T)/55 kt
Calculate the true track and GS?

A – 125 – 322 kt
B – 123 – 320 kt
C – 126 – 320 kt
D – 125 – 318 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11084. Given:
TAS = 200 kt
Track (T) = 110º
W/V = 015/40 kt
Calculate the HDG (oT) and GS?

A – 097 – 201 kt
B – 121 – 207 kt
C – 121 – 199 kt
D – 099 – 199 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

11086. Given:
TAS = 270 kt
True HDG = 270º
Actual wind 205º(T)/30 kt
Calculate the drift angle and GS?

A – 6R – 259 kt
B – 6L – 256 kt
C – 6R – 251 kt
D – 8R – 259 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11088. Given:
TAS = 290 kt
True HDG = 171º
W/V = 310º(T)/30 kt
Calculate the drift angle and GS?

A – 4ºR– 310 kt
B – 4ºL – 314 kt
C – 4ºR – 314 kt
D – 4ºL – 310 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11089. The following information is displayed on an Inertial Navigation System: GS 520 kt. True HDG 090º, Drift angle 5º right, TAS 480 kt SAT (static air temperature) -51ºC. The W/V being experienced is:

A – 225º/60 kt
B – 320º/60 kt
C – 220º/60 kt
D – 325º/60 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11090. Given:
TAS = 440 kt
HDG (T) = 349º
W/V = 040/40 kt
Calculate the drift and GS?

A – 4L – 415 kt
B – 2L – 420 kt
C – 6L – 395 kt
D – 5L – 385 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

11092. Given:
M 0.80
OAT -50ºC
FL 330
GS 490 kt
VAR 20ºW
Magnetic heading 140º
Drift is 11º Right
Calculate the true W/V?

A – 200º/95 kt
B – 025º/47 kt
C – 020º/95 kt
D – 025º/45 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

14658. The reported surface wind from the control tower is 240°/35 kt. Runway 30 (300°). What is cross-wind component?

A – 30 kt
B – 24 kt
C – 27 kt
D – 21 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

15434. For a landing on runway 23 (227° magnetic) surface W/V reported by the ATIS is 180/30 kt. VAR is 13°E. Calculate the cross wind component?

A – 20 kt
B – 22 kt
C – 26 kt
D – 15 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

16294. How long will it take to travel 284 nm at a speed of 526 KPH?

A – 1.6 h
B – 1.9 h
C – 45 min
D – 1 h

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

16295. If it takes 132.4 mins to travel 840 nm, what is your speed in kmh?

A – 705 kmh
B – 290 kmh
C – 120 kmh
D – 966 kmh

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

061-04-04 List elements required for establishing DR position

8582. 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 undertain 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.

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

14654. Position A is located on the equator at longitude 130º00E. Position B is located 100 NM from A on a bearing of 225º(T). The co-ordinates of position B are:

A – 01º11N 128º 49E
B – 01º11S 128º 49E
C – 01º11N 131º 11E
D – 01º11S 131º 11E

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

14656. Given:
Position A 45ºN, ?ºE
Position B 45ºN, 45º15E
Distance A-B = 280 NM
B is to the East of A
Required: longitude of position A?

A – 38º39E
B – 49º57E
C – 51º51E
D – 40º33E

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

14670. The Great Circle bearing of B (70ºS 060ºE), from A (70ºS 030ºW), is approximately?

A – 150º (T)
B – 090º (T)
C – 318º (T)
D – 135º (T)

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

15428. What is the final position after the following rhumb line tracks and distances have been followed from position 60º00N 030º00W?
South for 3600 NM
East for 3600 NM
North for 3600 NM
West for 3600 NM
The final position of the aircraft is:

A – 59º00N 090º00W
B – 60º00N 090º00W
C – 60º00N 030º00E
D – 59º00N 060º00W

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

15435. An aircraft at positon 60ºN 005ºW tracks 090º(T) for 315km. On completion of the flight the longitude will be:

A – 002º 10W
B – 000º 15E
C – 000º 40E
D – 005º 15E

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

15436. The departure between positions 60°N 160°E and 60sN x is 900 NM. What is the longitude of x?

A – 170°W
B – 140°W
C – 145°E
D – 175°E

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

15437. 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 – 22°00N
B – 03°50N
C – 02°00N
D – 12°15N

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

16283. You are flying from A (30S 20E) to B (30S 20W). At what longitude will the GC track equal the RL track?

A – 10°E
B – 10°W
C – 0°E/W
D – 20°W

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

16284. What is diat from 30°39S 20°20E to 45°23N 40°40E:

A – 14°44 N
B – 76°2 S
C – 76°2 N
D – 76°4 S

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

16285. What is the Chlong (in degrees and minutes) from A (45N 1630E) to B (45N 15540W)?

A – 38º05E
B – 38º50W
C – 38º05W
D – 38º50E

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

24019. Given:

True Track	245º
Drift	5º right
Variation	3ºE
Compass Hdg	242º

Calculate the Magnetic Heading:

A – 247º
B – 243º
C – 237º
D – 253º

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

24020. Grid heading is 299º, grid convergency is 55º West and magnetic variation is 90º West. What is the corresponding magnetic heading?

A – 084º
B – 334º
C – 154º
D – 264º

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

061-04-05 Calculate DR elements

8540. OAT = +35oC
Pressure alt = 5000 feet
What is true alt?

A – 4550 feet
B – 5550 feet
C – 4290 feet
D – 5320 feet

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

8550. Given:
Airport elevation is 1000 ft
QNH is 988 hPa
What is the approximate airport pressure altitude?
(Assume 1 hPa = 27 FT)

A – 680 FT
B – 320 FT
C – 1680 FT
D - -320 FT

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8561. Your pressure altitude is FL 55, the QNH is 998, and the SAT is +30C. What is Density Altitude?

A – 6980 feet
B – 7750 feet
C – 8620 feet
D – 10020 feet

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8565. You are on ILS 3º glideslope which passes over the runway threshold at 50 feet. Your DME range is 25 nm from the threshold. What is your height above the runway threshold elevation? (Use the 1 in 60 rule and 6000 feet = 1 nautical mile)

A – 8010 feet
B – 7450 feet
C – 6450 feet
D – 7550 feet

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8575. Given:
FL 350
Mach 0.80
OAT -55ºC
Calculate the values for TAS and local speed of sound (LSS)?

A – 461 kt, LSS 296 kt
B – 237 kt, LSS 296 kt
C – 490 kt, LSS 461 kt
D – 461 kt, LSS 576 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8577. The pressure alt is 29000 feet and the SAT is -55C. What is density altitude?

A – 27500 feet
B – 26000 feet
C – 30000 feet
D – 31000 feet

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

8599. You are flying at a True Mach No of 0.82 in a SAT of -45ºC. At 1000 hours you are 100 nm from the POL DME and your ETA at POL is 1012. ATC ask you to slow down to be at POL at 1016. What should your new TMN be if you reduce speed at 100 nm distance to:

A – M .76
B – M .72
C – M .68
D – M .61

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

8604. Given:
TAS = 485 kt
OAT = ISA +10ºC
FL 410
Calculate the Mach Number?

A – 0.85
B – 0.90
C – 0.825
D – 0.87

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

8617. Given:
TAS 487 kt
FL 330
Temperature ISA + 15
Calculate the Mach Number?

A – 0.81
B – 0.84
C – 0.76
D – 0.78

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

9752. A flight is to be made from A 49ºS 180ºE/W to B 58ºS, 180ºE/W. The distance is kilometres from A to B is approximately:

A – 1222
B – 1000
C – 540
D – 804

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

9790. An aircraft is at 10N and is flying South at 444 km/hour. After 3 hours the latitude is:

A – 10S
B – 02N
C – 02S
D – 0N/S

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

11027. Given:
Aircraft at FL 150 overhead an airport elevation of airport 720 ft
QNH is 1003 hPa
OAT at FL 150 -5ºC
What is the true altitude of the aircraft? (Assume 1 hPa = 27 ft)

A – 15,840 ft
B – 15,280 ft
C – 14,160 ft
D – 14,720 ft

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11028. An aircraft takes off from the aerodrome of BRIOUDE (altitude 1 483 ft, QFE = 963 hPa, temperature = 32oC). Five minutes later, passing 5,000 ft on QFE, the second altimeter set on 1,013 hPa will indicate approximately:

A – 6,900 ft
B – 6,400 ft
C – 6,000 ft
D – 4,000 ft

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

11051. An aircraft maintaining a 5.2% gradient is at 7 NM from the runway, on a flat terrain; its height is approximately:

A – 680 ft
B – 2210 ft
C – 1890 ft
D – 3640 ft

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

15425. Given:
Pressure Altitude 29,000 ft, OAT -55C.
Calculate the Density Altitude?

A – 27,500 ft
B – 31,500 ft
C – 33,500 ft
D – 26,000 ft

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: A

16279. An aircraft leaves point A (75N 50W) and flies due North. At the North Pole it flies due south along the meridian of 65°50E unit reaches 75N (point B). What is the total distance covered?

A – 1,650 nm
B – 2,000 nm
C – 2,175 nm
D – 1,800 nm

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: D

25144. Your true altitude is 5500 feet, the QNH is 995, and the SAT is +30°C. What is Density Altitude:

A – 7080 feet
B – 8120 feet
C – 9280 feet
D – 9930 feet

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

25218. Given:
Pressure Altitude = 29,000 ft
OAT = -50°
Calculate the Density Altitude

A – 26,000 ft
B – 27,000 ft
C – 31,000 ft
D – 33,500 ft

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: B

25221. Given:
M0.9
FL370
OAT -70C
Determine CAS:

A – 500 kts
B – 281 kts
C – 293 kts
D – 268 kts

Ref: AIR: atpl, cpl; HELI: atpl, cpl

Ans: C

061-04-06 Construct DR position

8556. A Lamberts Conical conformal chart has standard parallels at 63N and 41N. What is the constant of the cone?

A – 0.891
B – 0.788
C – 0.656
D – 0.707

Ref: AIR: atpl, cpl;

Ans: B

8589. Given:
A polar stereographic chart whose grid is aligned with the zero meridian.
Grid track 344°
Longitude 115°00W
Calculate the true course?

A – 099°
B – 229°
C – 279°
D – 049°

Ref: AIR: atpl, cpl;

Ans: B

10900. The great circle distance between position A (59°34.1N 008°08.4E) and B (30°25.9N 171°51.6W) is:

A – 5,400 NM
B – 10,800 NM
C – 2,700 NM
D – 10,800 NM

Ref: AIR: atpl, cpl;

Ans: A

11073. (Refer to figure 061-09)

1300 UTC DR position 37°30N 021°30W alter heading PORTO SANTO NDB (33°03N 016°23W) TAS 450 kt, Forecast W/V 360°/30 kt. Calculate the ETA at PORTO SANTO NDB:

A – 1341
B – 1344
C – 1348
D - 1354

Ref: AIR: atpl, cpl;

Ans: C

16277. You are flying from A (50N 10W) to B (58N 02E). At what longitude will the Great Circle track equal the Rhumb Line (RL) track between A and B:

A – 06°W
B – 0°W
C – 04°W
D – 04°E

Ref: AIR: atpl, cpl;

Ans: C

25202. At N6010.0 on a Mercator chart the scale is 1:5 000 000; the length of a line on the chart between C N6010.0 E00810.0 and D N6010.0 W00810.0 is:

A – 19.2 cm
B – 16.2 cm
C – 17.8 cm
D – 35.6 cm

Ref: AIR: atpl, cpl;

Ans: C

25206. Given:
Aircraft position S8000.0 E14000.0
Aircraft tracking 025°(G)
If the grid is aligned with the Greenwich Anti-Meridian, the True track is:

A – 245°
B – 205°
C – 165°
D – 065°

Ref: AIR: atpl, cpl;

Ans: D

061-04-07 Name range specifics of maximum range and radius of action

8528. An aircraft was over Q at 1320 hours flying direct to R
Given:
Distance Q to R 3016 NM
True airspeed 480 kt
Mean wind component OUT -90 kt
Mean wind component BACK +75 kt
The ETA for reaching the Point of Equal Time (PET) between Q and R is:

A – 1820
B – 1756
C – 1752
D – 1742

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

8537. An aircraft was over A at 1435 hours flying direct to B. Given: Distance A to B 2,900 NM True airspeed 470 kt Mean wind component OUT +55 kt Mean wind component BACK -75 kt. The ETA for reaching the Point of Equal Time (PET) between A and B is:

A – 1721
B – 1744
C – 1846
D – 1657

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

8541. Given:
Distance A to B 2346 NM
Groundspeed OUT 365 kt
Groundspeed BACK 480 kt
Safe endurance 8 HR 30 MIN
The time from A to the Point of Safe Return (PSR) A is:

A – 197 min
B – 219 min
C – 290 min
D – 209 min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

8544. 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 Point of Equal Time (PET)?

A – 470 NM
B – 530 NM
C – 455 NM
D – 500 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8552. An aircraft was over A at 1435 hours flying direct to B
Given:
Distance A to B 2900 NM
True airspeed 470 kt
Mean wind component OUT +55 kt
Mean wind component BACK -75 kt
Safe endurance 9 HR 30 MIN
The distance from A to the Point of Safe Return (PSR) A is:

A – 2844 NM
B – 1611 NM
C – 1759 NM
D – 2141 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

8579. Given:
Distance A to B 1973 NM
Groundspeed OUT 430 kt
Groundspeed BACK 385 kt
The time from A to the Point of Equal Time (PET) between A and B is:

A – 145 min
B – 130 min
C – 162 min
D – 181 min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8591. Given:
Distance A to B 2484 NM
Mean groundspeed out 420 kt
Mean groundspeed back 500 kt
Safe endurance 08 Hr 30 min
The distance from A to the Point of Safe Return (PSR) A is:

A – 1908 NM
B – 1940 NM
C – 1736 NM
D – 1630 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8593. Given:
Distance Q to R 1760 NM
Groundspeed out 435 kt
Groundspeed back 385 kt
The time from Q to the Point of Equal Time (PET) between Q and R is:

A – 110 min
B – 114 min
C – 106 min
D – 102 min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8603. From the departure point, the distance to the point of equal time is:

A – proportional to the sum of ground speed out and ground speed back
B – inversely 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8611. Given:
Distance A to B 2484 NM
Groundspeed OUT 420 kt
Groundspeed BACK 500 kt
The time from A to the Point of Equal Time (PET) between A and B is:

A – 173 min
B – 163 min
C – 193 min
D – 183 min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

8613. Given:
AD = Air distance
GD = Ground distance
TAS = True airspeed
GS = Ground speed
Which 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)

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8622. 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 – 170 NM
B – 195 NM
C – 180 NM
D – 165 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

8623. Given:
Distance A to B 3623 NM
Groundspeed out 370 kt
Groundspeed back 300 kt
The time from a to the Point of Equal Time (PET) between A and B is:

A – 323 min
B – 288 min
C – 263 min
D – 238 min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

11040. An aircraft has a TAS of 300 knots and a safe endurance of 0 hours. If the wind component on the outbound leg is 50 knots head, what is the distance to the point of safe endurance?

A – 1500 nm
B – 1458 nm
C – 1544 nm
D – 1622 nm

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

11045. The distance from A to B is 2368 nautical miles. If outbound groundspeed in 365 knots and homebound groundspeed is 480 knots and safe endurance is 8 hours 30 minutes, what is the time to the PNR?

A – 290 minutes
B – 209 minutes
C – 219 minutes
D – 190 minutes

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

11058. 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 – 930 NM
B – 1532 NM
C – 1685 NM
D – 1865 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

11065. Given:
Distance Q to R 1760 NM
Groundspeed out 435 kt
Groundspeed back 385 kt
Safe endurance 9 hr
The distance from Q to the Point of Safe Return (PSR) between Q and R is:

A – 1313 NM
B – 1838 NM
C – 1467 NM
D – 1642 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

11087. An aircraft was over Q at 1320 hours flying direct to R.
Given:
Distance Q to R 3016 NM
True airspeed 480 kt
Mean wind component out – 90 kt
Mean wind component back +75 kt
Safe endurance 10:00 hr
The distance from Q to the Point of Safe Return (PSR) Q is:

A – 2370 NM
B – 2290 NM
C – 1310 NM
D – 1510 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

11091. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

24042. The distance between point of departure and destination is 340 NM and wind velocity in the whole area is 100°/25 kt. TAS is 140 kt. True Track is 135° and safe endurance 3 hr and 10 min. How long will it take to reach the Point of Safe Return?

A – 1 hr and 44 min
B – 1 hr and 37 min
C – 1 hr and 21 min
D – 5 hr and 30 min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

061-04-08 Miscellaneous DR uncertainties and practical means of correction

16314. Calculate the diat from N 001 15 E090 00 to S090 00:

A – 91°15N
B – 88°45N
C – 91°15S
D – 268°15N

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

16315. Calculate the dlong from N001 15 E090 00 to N001 15 E015 15:

A – 74°45E
B – 74°15E
C – 74°45W
D – 105°15N

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

061-05 IN-FLIGHT NAVIGATION

061-05-01 Use of visual observations and application to in-flight navigation

8627. (Refer to figure 061-01)

What is the symbol for an unlighted obstacle?

A – 10
B – 14
C – 15
D – 9

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

8635. 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 – 101°
B – 059°
C – 239°
D – 329°

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8639. 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 – 122
B – 088
C – 268
D – 302

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8664. 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 – 3 NM
B – 12 NM
C – 9 NM
D – 6 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

8667. 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 – 122°
B – 302°
C – 088°
D – 268°

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

8669. (Refer to figure 061-01)

What is the chart symbol for a lightship?

A – 15
B – 16
C – 10
D – 12

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8673. 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 – 160°
B – 130°
C – 220°
D – 190°

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

8674. (Refer to figure 061-01)

Which of the following is the symbol for an exceptionally high (over 1000 feet AGL) lighted obstruction?

A – 13
B – 10
C – 14
D – 12

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

8677. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8700. An island appears 60º 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 276º with the magnetic variation (VAR) 10ºE?

A – 046º
B – 086º
C – 226º
D – 026º

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8701. An island appears 30º 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 020º with the magnetic variation (VAR) 25º W?

A – 145º
B – 195º
C – 205º
D – 325º

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8713. You are flying a VFR route and have become uncertain of your position. Which is the best course of action?

A – Set heading towards a line feature – coastline, river, or motorway
B – Turn round and fly your flight plan tracks in reverse until you see something you recognised before
C – Fly a series of ever-expanding circles from your present position till you find your next check point
D – Turn round and fly your flight plan in reverse back to base

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

11106. 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°

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

061-05-02 Navigation in climb and descent

8629. Given:
Aircraft height 2500 ft
ILS GP angle 3°
At what approximate distance from TRH can you expect to capture the GP?

A – 14.5 NM
B – 7.0 NM
C – 13.1 NM
D – 8.3 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

8634. 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 – 650 ft/min
B – 6500 ft/min
C – 4500 ft/min
D – 3900 ft/min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8647. On a 12% glide slope, your ground speed is 540 knots. What is your rate of descent?

A – 6550 feet/min
B – 4820 feet/min
C – 8740 feet/min
D – 3120 feet/min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8648. An aircraft at FL 350 is required to commence descent when 85 NM from a VOR and to cross the VOR at FL 80. The mean GS for the descent is 340 kt. What is the minimum rate of descent required?

A – 1900 ft/min
B – 1800 ft/min
C – 1600 ft/min
D – 1700 ft/min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8654. An aircraft at FL 330 is required to commence descent when 65 NM from a VOR and to cross the VOR at FL 100. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8655. An aircraft at FL 350 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 – 79 NM
B – 69 NM
C – 49 NM
D – 59 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8656. What is the effect on the Mach number and TAS in an aircraft that is climbing with constant CAS?

A – Mach number decreases; TAS decreases
B – Mach number remains constant; TAS increases
C – Mach number increases; TAS increases
D – Mach number increases; TAS remains constant

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

8663. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8665. At 65 nm from a VOR you commence a descent from FL 330 in order to arrive over the VOR at FL 100. Your mean groundspeed in the descent is 240 knots. What rate of descent is required?

A – 1420 feet/min
B – 1630 feet/min
C – 1270 feet/min
D – 1830 feet/min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8672. An aircraft at FL 370 is required to commence descent when 100 NM from a DME facility and to cross the station at FL 120. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8680. Given:
ILS GP angle = 3.5°
GS = 150 kt
What is the approximate rate of descent?

A – 1000 ft/min
B – 700 ft/min
C – 900 ft/min
D – 800 ft/min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

8687. At 0422 an aircraft at FL 370, GS 320 kt, is on the direct track to VOR X 185 NM distant. The aircraft is required to cross VOR X at FL 80. 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 – 0448
B – 0445
C – 0451
D – 0454

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8697. An aircraft at FL 350 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 – 1390 ft/min
B – 1340 ft/min
C – 1240 ft/min
D – 1290 ft/min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8698. An aircraft at FL 390 is required to descend to cross a DME facility at FL 70. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8712. An aircraft at FL 290 is required to commence descent when 50 NM from a VOR and to cross that VOR at FL 80. Mean GS during descent is 271 kt. What is the minimum rate of descent required?

A – 1700 ft/min
B – 2000 ft/min
C – 1900 ft/min
D – 1800 ft/min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

11101. An aircraft at FL 370 is required to commence descent at 120 NM from a VOR and to cross the facility at FL 130. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

11102. Given:
TAS = 197 kt
True course = 240º
W/V = 180/30 kt
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 – 800 ft/min
B – 1400 ft/min
C – 950 ft/min
D – 1500 ft/min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

24010. An aircraft is descending down a 6% slope whilst maintaining a G/S of 300 kt. The rate of descent of the aircraft is approximately:

A – 1800 ft/min
B – 10800 ft/min
C – 3600 ft/min
D – 900 ft/min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

24050. The outer marker of an ILS with a 3º 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 – 1400 ft
B – 1450 ft
C – 1350 ft
D – 1300 ft

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

25143. By what amount must you change your rate of descent given a 10 knot increase in headwind on a 3o glideslope:

A – 50 feet per minute increase
B – 30 feet per minute increase
C – 50 feet per minute increase
D – 30 feet per minute decrease

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

061-05-03 Navigation in Cruising Flight, Use of Fixes to Revise Navigation Data

8624. Isogrivs on a chart indicate lines of:

A – zero magnetic variation
B – equal magnetic dip
C – equal horizontal directive force
D – equal grivation

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

8626. Given:
ETA to cross a meridian is 2100 UTC
GS 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 – 60 kt
B – 90 kt
C – 75 kt
D – 40 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

8628. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the radial and DME distance from Connaught VOR/DME (CON, 5355N 00849W) to overhead Abbey Shrule aerodrome (5336N 00739W)?

A – 304 47 nm
B – 124 47 nm
C – 296 46 nm
D – 116 46 nm

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8630. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

You are on a heading of 105°, deviation 3 E WTD NDB (5211.3N 00705.0W) bears 013R, CRK VOR (5150.4N 00829.7W) QDM is 211. What is your position?

A – 5245N 00757W
B – 5228N 00802W
C – 5412N 00639W
D – 5217N 00745W

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8636. An aircraft at FL 140, 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 – 25 kt
B – 20 kt
C – 30 kt
D – 15 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8641. 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 – 318°
B – 054°
C – 234°
D – 038°

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8642. 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 – 1203
B – 1206
C – 1153
D – 1157

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8644. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

Kerry (5210.9N 00932.0W) is 41 nm DME, Galway 5318.1N 00856.5W) is 50 nm DME. What is your position?

A – 5242N 00827W
B – 5230N 00834W
C – 5255N 00819W
D – 5219N 00809W

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8646. Given:
Half way between two reporting points the navigation log gives the following information:
TAS 360 kt
W/V 330°/80 kt
Compass heading 237°
Deviation on this heading -5°
Variation 19°W
What is the average ground speed for this leg?

A – 360 kt
B – 354 kt
C – 373 kt
D – 403 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

8650. An aircraft at FL 310, 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 – M 0.76
B – M 0.74
C – M 0.78
D – M 0.80

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8653. TAS = 240 knots
The relative bearing from an NDB is 315R at 1410. At 1420 the bearing has changed to 270R. What is your distance from the NDB at 1420?

A – 40 nm
B – 50 nm
C – 60 nm
D – 70 nm

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8657. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

An aircraft is on the 025 radial from Shannon VOR (SHA, 5243N 00853W) at 49 DME. What is its position?

A – 5329N 00930W
B – 5239N 00830W
C – 5229N 00930W
D – 5329N 00830W

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

8660. An aircraft at position 2700N 17000W travels 3000 km on a track of 180T, then 3000 km on a track of 090T, then 3000 km on a track of 000T, then 3000 km on a track of 270T. What is its final position?

A – 2700N 17000W
B – 0000N 17000W
C – 2700N 17318W
D – 2700N 14300W

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

8661. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the mean true track and distance from the BAL VOR (5318N 00627W) to CFN NDB (5520N 00820W)?

A – 328° 125
B – 148° 125
C – 328° 134
D – 148° 134

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8666. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8670. An aircraft at FL 120, IAS 200 kt, OAT -5° and wind component +30 kt, 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 – 169 kt
B – 165 kt
C – 159 kt
D – 174 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

8681. 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 – 1401 UTC
B – 1333 UTC
C – 1347 UTC
D – 1340 UTC

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8685. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

You are at position 5340N 00840W. What is the QDR from the SHA VOR (5243N 00853W)?

A – 217
B – 037
C – 209
D – 029

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8694. 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 – 1110 UTC
B – 1115 UTC
C – 1044 UTC
D – 1050 UTC

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8695. 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° left
B – 6° right
C – 4° right
D – 8° right

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

8702. What is the Rhumb Line track from A (4500N 01000W) to B (4830N 01500W)?

A – 315 T
B – 330 T
C – 215 T
D – 150 T

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8704. 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°

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8711. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What is the approximate course (T) and distance between Waterford NDB (WTD, 5212N 00705W) and Sligo NDB (SLG, 5417N 00836W)?

A – 344° 139 nm
B – 164° 138 nm
C – 156° 136 nm
D – 336° 137 nm

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

11094. 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 – 50 NM
B – 40 NM
C – 60 NM
D – 30 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

11099. 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 – 6° Right
B – 9° Right
C – 15° Right
D – 18° Right

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

11100. 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 – 4° Left
B – 16° Left
C – 12° Left
D – 8° Left

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

11103. 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

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

11104. 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 – 0 NM
B – 7 NM
C – 14 NM
D – 21 NM

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

11109. An aircraft at FL 370, 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 – M 0.79
B – M 0.73
C – M 0.75
D – M 0.81

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

11111. 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 – 320 kt
B – 360 kt
C – 300 kt
D – 340 kt

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

14666. As the INS position of the departure aerodrome, co-ordinates 35°32.7N 139°46.3W are input instead of 35°32.7N 139°46.3E. When the aircraft subsequently passes point 52° N 180°W, the longitude value show on the INS will be:

A – 080°27.4W
B – 099°32.6W
C – 099°32.6 E
D – 080°27.4 E

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

15441. Given:
Distance A to B 1973 NM
Groundspeed out 430 kt
Groundspeed back 385 kt
Safe endurance 7 hr 20 min
The distance from A to the Point of Safe Return (PSR) A is:

A – 1664 nm
B – 1698 nm
C – 1422 nm
D – 1490 nm

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

15442. Given:
Distance A to B 2346 NM
Groundspeed out 365 kt
Groundspeed back 480 kt
The time from A to the Point of Equal Time (PET) between A and B is:

A – 167 min
B – 219 min
C – 260 min
D – 197 min

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

16282. You are flying from A (30S 20E) to B (30S 20W). What is the final GC track?

A – 250° (T)
B – 270° (T)
C – 280° (T)
D – 300° (T)

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

16313. Refer to figure 061-02)

What is the True bearing of point A from point B?

A – 000°
B – 090°
C – 270°
D – 360°

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

21692. An aircraft at latitude 10º North flies south at a groundspeed of 445 km/hr.
What will be its latitude after 3 hrs?

A – 03º 50'S
B – 02º 00'S
C – 12º 15'S
D – 22º 00'S

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

24003. (Refer to figure 061-11)

Given:
CON VOR (N5354.8 W00849.1) DME 30 NM
CRN VOR (N 5318.1 W00856.5) DME 25 NM
Aircraft heading 270º(M)
Both DME distances decreasing

What is the aircraft position?

A – N5330 W00820
B – N5343 W00925
C – N5335 W00925
D – N5337 W00820

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

24014. An island is observed to be 30º to the right of the nose of the aircraft.
The aircraft heading is 290º(M), variation 10º(E)
The bearing (ºT) from the aircraft to the island is:

A – 330
B – 270
C – 250
D – 310

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

25142. You are heading 080°T when you get a range and bearing fix from your AWR on a headland at 185 nm 30° left of the nose. What true bearing do you plot on the chart?

A – 050 from the headland, using the headland's meridian
B – 050 from the headland, using the aircraft's meridian
C – 230 from the headland, using the headland's meridian
D – 230 from the headland, using the aircraft's meridian

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

25149. An aircraft starts from (S0400.0 W17812.2) and flies north for 2950 nm along the meridian, then west for 382 nm along the parallel of latitude. What is the aircraft's final position?

A – N45100 E172138
B – N53120 W169122
C – N45100 W169122
D – N53120 E172138

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

25154. An aircraft at latitude S0612.0 tracks 000°T for 1667 km. On completion of the flight the latitude will be:

A – S2112.0
B – N2112.5
C – N0848.0
D – N0914.0

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

25190. An airraft departs from N0212.0 E0450.0 on a track of 180°T and flies 685 km. On completion of the flight the latitude will be:

A – S1112.5
B – S0813.0
C – S0357.0
D – S0910.5

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

25191. A is at S4500.0 W01000.0
B is at S4500.0 W03000.0
The true course of an aircraft on its arrival at B, to the nearest degree is:

A – 263°
B – 270°
C – 277°
D – 284°

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

25195. An aircraft at position 6010.0N 00512.2W flies 165 km due East. The aircraft's new position is:

A – 6010.0N 00812.0E
B – 6010.0N 00212.4W
C – 6010.0N 00110.8E
D – 6010.0N 00110.8W

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

25304. An aircraft at position 0000N/S 16327W flies a track of 225°T for 70 nm. What is its new position?

A – 0049N 16238W
B – 0049S 16238W
C – 0049N 16416W
D – 0049S 16416W

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

061-05-04 Flight Log

8690. You are heading 345M, the variation is 20E, and you take a radar bearing of 30 left of the nose from an island. What bearing do you plot?

A – 160T
B – 155T
C – 140T
D – 180T

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8691. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

What are the symbols at Galway Carnmore (5318.1N 00856.5W)?

A – VOR, NDB, DME, compulsory reporting point
B – Civil airport, NDB, DME, non-compulsory reporting point
C – Civil airport, VOR, DME, non-compulsory reporting point
D – VOR, NDB, DME, non-compulsory reporting point

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: B

8692. (Refer to Jeppesen Student Manual – chart E(LO)1 or figure 061-11)

The airport at 5211N 00932W is:

A – Kerry
B – Cork
C – Shannon
D – Waterford

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8709. 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 – 125°, 2°R, 123°, 2°W, 121°, -4°, 117°
B – 115°, 5°R, 120°, 3°W, 123°, +2°, 121°
C – 117°, 4°L, 121°, 1°E, 122°, -3°, 119°
D – 119°, 3°L, 122°, 2°E, 120°, +4°, 116°

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

21670. (Refer to figure 061-06)

Complete line 6 of the ‘FLIGHT NAVIGATION LOG’, positions ‘L’ to ‘M’. what is the HDG^{o} (M) and ETA?

A – HDG 064^{o} – ETA 1449 UTC
B – HDG 075^{o} – ETA 1452 UTC
C – HDG 070^{o} – ETA 1459 UTC
D – HDG 075^{o} – ETA 1502 UTC

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

21673. (Refer to figure 061-06)

Complete line 3 of the ‘FLIGHT NAVIGATION LOG’, positions ‘E’ to ‘F’. What is the HDG^{o} (M) and ETA?

A – HDG 095^{o} – ETA 1155 UTC
B – HDG 106^{o} – ETA 1215 UTC
C – HDG 115^{o} – ETA 1145 UTC
D – HDG 105^{o} – ETA 1205 UTC

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: D

21699. (Refer to figure 061-06)

Complete line 2 of the ‘FLIGHT NAVIGATION LOG’, positions ‘C’ to ‘D’. What is the HDG^{o} (M) and ETA?

A – HDG 193^{o} – ETA 1239 UTC
B – HDG 188^{o} – ETA 1229 UTC
C – HDG 193^{o} – ETA 1249 UTC
D – HDG 183^{o} – ETA 1159 UTC

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

21700. (Refer to figures 061-06 and 061-05)

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

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

061-05-05 Purposes of (FMS) Flight Management Systems

8638. Which of the following lists the first three pages of the FMC/CDU normally used to enter data on initial start-up of te B737-400 Electronic Flight Intrument System?

A – IDENT – RTE – DEPARTURE
B – POS INIT – RTE – IDENT
C – IDENT – POS INIT – RTE
D – POS INIT – RTE – DEPARTURE

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: C

8645. In the B737-400 Flight Management System the CDUs are used during pre-flight to:

A – manully initialise the IRSs and FMC with dispatch information
B – automatically initialise the IRSs and FMC with dispatch information
C – manually initialise the Flight Director System and FMC with dispatch information
D – manually initialise the IRSs, FMC and Autothrotle with dispatch information

Ref: AIR: atpl, cpl; HELI: atpl, cpl;

Ans: A

8659. 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 – At top of descent
B – At top of climb
C – Just after take-off
D – On final approach

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: C

8675. How is the radio position determined by the FMC in the B737-400 Electronic Flight Instrument System?

A – DME ranges and/or VOR/ADF bearings
B – DME/DME or VOR/DME
C – DME/DME
D – VOR/DME range and bearing

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: C

8676. 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

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: A

8689. Which component of the B737-400 Flight Management System (FMS) is used to enter flight plan routeing and performance parameters?

A – Flight Management Computer
B – Multi-Function Control Display Unit
C – Inertial Reference System
D – Flight Director System

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: B

8705. Given:
Distance A to B is 325 NM
Planned GS 315 kt
ATD 1130 UTC
1205 UTC – fi obtained 165 NM along track
What GS must be maintained from the fix in order to achieve planned ETA at B?

A – 335 kt
B – 375 kt
C – 395 kt
D – 355 kt

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: D

8707. The purpose of the Flight Management System (FMS) as for example installed in the B737-400 is to provide:

A – both manual 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 – continuous automatic navigation guidance and performance management

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: D

8708. 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 frequencies; runway codes; airport ICAO identifiers
B – Airway names; navaid identifiers; airport names; waypoint code numbers
C – Waypoint names; navaid identifiers; runway numbers; airport ICAO identifiers
D – Waypoint names; navaid positions; airport ICAO identifiers; airport names

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: C

8710. 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

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: A

8765. What are the levels of message on the Boeing 737-400 FMC?

A – Urgent and Routine
B – Priority and Alerting
C – Alert and Advisory
D – Urgent and Advisory

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: C

11096. 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; latitude and longitude;waypoint name
B – Identifier bearing/distance; place bearing/place distance; along/across track displacement; latitude and longitude
C – Identifier bearing/distance; place distance/place distance; along track displacement; latitude and longitude
D – Identifier bearing/distance; place distance/place distance; along-track displacement; latitude and longitude

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: C

11110. 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 IRS displays
B – A warning message is displayed on the EHSI and MFDU
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

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: B

11112. 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 – Priority and Alerting
B – Urgent and Routine
C – Alerting and Advisory
D – Urgent and Advisory

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: C

15414. 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 – varies by 10°
B – decreases by 6°
C – varies by 4°
D – increases by 5°

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: D

24029. In a Flight Management System (FMS), control Display Units (CDUs) are used pre-flight to

A – manually initialise the Flight Director System and FMC with dispatch information
B – automatically initialise the IRSs and FMC with dispatch information
C – manually initialise the IRSs and FMC with dispatch information
D – manually initialise the IRSs, FMC and Air Data Computer with dispatch information

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: C

25131. When can a pilot change the data in the FMS data base?

A – Every 28 days
B – When deemed necessary
C – When there is a fault
D – He can't; for the pilot the FMS data base is read only

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: D

25134. The FMC position is:

A – The average of the IRS positions
B – The average of the IRS and radio navigation positions
C – Computer generated from the IRS and radio navigation positions
D – Computer generated from the radio navigation positions

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: C

25135. Which of the following can be input to the FMC using a maximum of 5 alphanumerics:

A – Waypoints, latitude and longitude and SIDs/STARs
B – ICAO aerodrome indicators, navigation facilities and SIDs/STARs
C – Waypoints, airway designators and latitude and longitude
D – Navigation facilities, reporting points and airway designators

Ref: AIR: atpl; HELI: atpl, cpl;

Ans: D

061-06 INERTIAL NAVIGATION SYSTEMS (INS)

061-06-01 Principles and Practical application

8715. What does the sensor of an INS/IRS measure?

A – Velocity
B – Precession
C – Horizontal Earth Rate
D – Acceleration

Ref: AIR: atpl;

Ans: D

8716. An INS platform is kept at right angles to local gravity by applying corrections for the effects of:

i. Aircraft manoeuvres
ii. Earth rotation
iii. Transport wander
iv. Coriolis
v. Gyroscopic inertia

A – i, iii and v
B – ii, iii and v
C – ii, iv and v
D – ii, iii and iv

Ref: AIR: atpl;

Ans: D

8717. The term drift refers to the wander of the axis of a gyro in:

A – the vertical and horizontal plane
B – the vertical plane
C – the horizontal plane
D – any plane

Ref: AIR: atpl;

Ans: C

8718. What additional information is required to be input to an Inertial Navigation System (INS) in order to obtain an W/V readout?

A – Mach Number
B – IAS
C – Altitude and OAT
D – TAS

Ref: AIR: atpl;

Ans: D

8721. In an IRS:

A – the accelerometers are strapped down but the platform is gyro stabilised
B – the platform is strapped down but the accelerometers are gyro-stabilised
C – accelerometers and platform are both gyro-stabilised
D – accelerometers and platform are both strapped down

Ref: AIR: atpl;

Ans: D

8725. In order to maintain an accurate vertical using a pendulous sytem, an aircraft inertial platform incorporates a device:

A – without damping and a period of 84.4 min
B – with 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

Ref: AIR: atpl;

Ans: B

8727. With reference to inertial navigation systems, a TAS input is:

A – not required
B – required to provide a W/V read out
C – required for Polar navigation
D – required for rhumb line navigation

Ref: AIR: atpl;

Ans: B

8735. In what plane is gyro wander known as drift?

A – Horizontal
B – Vertical
C – Horizontal and vertical
D – Neither – it is a separate phenomenon

Ref: AIR: atpl;

Ans: A

8745. In a ring laser gyro, the purpose of the dither motor is to:

A – enhance the accuracy of the gyro at all rotational rates
B – overcome laser lock
C – compensate for transport wander
D – stabilise the laser frequencies

Ref: AIR: atpl;

Ans: B

8749. An Inertial Navigation System, what is the output of the first stage North/South integrator?

A – Groundspeed
B – Latitude
C – Velocity along the local meridian
D – Change of latitude

Ref: AIR: atpl;

Ans: C

8757. What measurement is used to carry out alignment of an Inertial Navigation System?

A – Acceleration sensed by the east gyro horizontal accelerometer
B – Acceleration sensed by the north gyro horizontal accelerometer
C – Acceleration sensed by the north gyro ertical accelerometer
D – Difference in magnitude of the value of gravity compared with the gravity at the last known position

Ref: AIR: atpl;

Ans: A

8764. 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

Ref: AIR: atpl;

Ans: A

8775. What is the name given to an Inertial Reference System (IRS) which has the gyros and accelerometers as part of the units fixture to the aircraft structure?

A – Solid state
B – Rigid
C – Strapdown
D – Ring laser

Ref: AIR: atpl;

Ans: C

8778. 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

Ref: AIR: atpl;

Ans: A

8782. In an Inertial Navigation System (INS), Ground speed (GS) is calculated:

A – from TAS and W/V from RNAV data
B – from TAS and W/V from Air Data Computer (ADC)
C – by integrating measured acceleration
D – by integrating gyro precession in N/S and E/W directions respectively

Ref: AIR: atpl;

Ans: C

8783. The resultant of the first integration from the north/south accelerometer of an inertial navigation system (INS) in the NAV MODE is:

A – latitude
B – groundspeed
C – change latitude
D – velocity along the local meridian

Ref: AIR: atpl;

Ans: D

8792. IRS differs from INS in that it:

A – has a longer spin-up time and is not affected by vertical accelerations due to gravity
B – has a shorter spin-up time and suffers from laser lock
C – does not need to correct for coriolis and central acceleration
D – does not experience Schuler errors as accelerometers are strapped down and are not rotated by a V/R feedback loop

Ref: AIR: atpl;

Ans: B

8802. Double integration of the output from the east/west accelerometer of an inertial navigation system (INS) in the NAV MODE give:

A – distance north/south
B – vehicle longitude
C – distance east/west
D – velocity east/west

Ref: AIR: atpl;

Ans: C

8803. Some inertial reference systems are known as strapdown. This means:

A – the system is mounted on a stabilised platform
B – the system is mounted and fixed to the aircraft structure
C – the accelerometers are fixed bu the gyros are stabilised
D – the gyros are fixed but the accelerometers are stabilised

Ref: AIR: atpl;

Ans: B

14665. Some inertial reference and navigation systems are known as strapdown. This means that:

A – only the gyros and not the accelerometers, become part of the units fixture to the aircraft structure
B – gyros, and accelerometers are mounted on a stabilised platform in the aircraft
C – gyros and accelerometers need satellite information input to obtain a vertical reference
D – the gyroscopes and accelerometers become part of the units fixture to the aircraft structure

Ref: AIR: atpl;

Ans: D

15450. 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

Ref: AIR: atpl;

Ans: A

24008. After alignment of the stable platform of an Inertial Navigation System, the output data from the platform is:

A – acceleration north/south and east/west and true heading
B – latitude, longitude and attitude
C – acceleration north/south and east/west, attitude and true heading
D – latitude, longitude and true heading

Ref: AIR: atpl;

Ans: C

24030. In an Inertial Reference System, accelerations are measured in relation to:

A – the direction of true north
B – WGS 84 Earth co-ordinates
C – local vertical at the aircraft position
D – aircraft axis

Ref: AIR: atpl;

Ans: D

24033. Inertial Reference System sensors include:

A – one east-west and one north-south gyro; one east-west and one north-south accelerometer
B – accelerometers mounted in the direction of the aircraft axis
C – laser gyros mounted in the direction of the aircraft axis
D – accelerometers, and laser gyros, mounted in the direction of the aircraft axis

Ref: AIR: atpl;

Ans: D

24051. 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

Ref: AIR: atpl;

Ans: A

24052. The purpose of the TAS input, from the air data computer, to the Inertial Navigation System is for:

A – position update in Attitude mode
B – the calculation of wind velocity
C – position update in Navigation mode
D – the calculation of drift

Ref: AIR: atpl;

Ans: B

25139. A laser reference system (IRS), as compared to a gyro reference system (INS):

A – is not strapped down and is adversely affected by g-forces
B – is strapped down and is not adversely affected by g-forces
C – the platform is strapped down but the accelerometers are not
D – the accelerometers are strapped down but the platform is not

Ref: AIR: atpl;

Ans: B

061-06-02 Alignment Procedures

8734. 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 will only differ if one of the systems has been decoupled because of a detected malfunction
B – The positions will be the same because they are an average of three difference positions
C – The positions are likely to differ because they are calculated from different sources
D – The positions will only differ if an error has been made when inputting the present position at the departure airport

Ref: AIR: atpl;

Ans: C

8739. After alignment, is it possible to update IRS positions?

A – Yes – by operation of the TO/GA switch, the runway threshold co-ordinates are inserted into the IRS
B – No
C – Yes, the pilots can insert updates
D – Yes, theprocess is automatic in flight from the DMEs

Ref: AIR: atpl;

Ans: B

8743. Alignment of INS and IRS equipments can take place in which of the following modes?

A – ATT and ALIGN
B – NAV and ALIGN
C – ALIGN and ATT
D – NAV and ATT

Ref: AIR: atpl;

Ans: B

8759. Which of the following statements concerning the loss of alignment by an Inertial Reference System (IRS) in flight is correct?

A – It is not usable in any mode and must be shut down for the rest 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 – The navigation mode, including present position and ground speed outputs, in inoperative for the remainder of the flight

Ref: AIR: atpl;

Ans: D

8760. 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

Ref: AIR: atpl;

Ans: A

8762. During the initial alignment of an inertial navigation system (INS) the equipment:

A – will accept a 10° error in initial latitude but will not accept a 10° error in initial longitude
B – will not accept a 10° error in initial latitude but will accept a 10° error in initial longitude
C – will accept a 10° error in initial latitude and initial longitude
D – will not accept a 10° error in initial latitude or initial longitude

Ref: AIR: atpl;

Ans: B

8767. When initial position is put into an FMS, the system:

A – rejects initial latitude error, but it will accept longitude error
B – rejects initial longitude error, but it will accept latitude error
C – rejects initial latitude or longitude error
D – cannot detect input errors, and accepts whatever is put in

Ref: AIR: atpl;

Ans: C

8772. Which of the following statements is correct concerning gyro-compassing of an inertial navigation system (INS)?

A – Gyro-compassing of an INS is possible in flight because it can differentiate between movement induced and misalignment induced accelerations
B – Gyro-compassing of an INS is not possible in flight because it cannot 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

Ref: AIR: atpl;

Ans: B

8776. The alignment time, at mid-latitudes, for an Inertial Reference System using laser ring gyros is approximately:

A – 5 min
B – 20 min
C – 2 min
D – 10 min

Ref: AIR: atpl;

Ans: D

8794. A pilot accidently turning OFF the INS in flight, and then turns it back ON a few moments later. Following this incident:

A – everything returns to normal and is usable
B – no useful information can be obtained from the INS
C – it can only beused for attitude reference
D – the INS is usable in NAV MODE after a position update

Ref: AIR: atpl;

Ans: C

8795. 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 only be aligned in the ALIGN mode
B – INS/IRS can be aligned in either the ALIGN or NAV mode
C – INS/IRS can be aligned in either the ALIGN or ATT mode
D – INS/IRS can only be aligned in NAV mode

Ref: AIR: atpl;

Ans: B

8801. When and where are IRS positions updated?

A – During all phases of flight
B – Only on the ground during the alignment procedure
C – When the FMS is in IRS ONLY NAV operation
D – When the VHF Nav Radios are selected to AUTO

Ref: AIR: atpl;

Ans: B

24009. After alignment of the stable platform of the Inertial Navigation System, the output data from the INS computer to the platform is:

A – rate corrections to the gyros
B – accelerations from the accelerometers
C – attitude
D – latitude and longitude

Ref: AIR: atpl;

Ans: A

24040. The data that needs to be inserted into an Inertial Reference System in order to enable the system to make a successful alignment for navigation is:

A – airport ICAO identifier
B – aircraft heading
C – the position of an in-range DME
D – aircraft position in latitude and longitude

Ref: AIR: atpl;

Ans: D

24044. The full alignment of the stable platform on an Inertial Navigation System:

A – may be carried out on the ground or when in straight and level flight
B – may be carried out during any phase of flight
C – is only possible on the ground when the aircraft is at a complete stop
D – may be carried out at any time so long as an accurate position is inserted into the system

Ref: AIR: atpl;

Ans: C

061-06-03 Accuracy, reliability, errors and coverage of INS/IRS

8784. 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 – sinusoidal
B – proportional to the square of time, t?
C – proportional to t/2
D – proportional to t

Ref: AIR: atpl;

Ans: D

8799. The azimuth gyro of an inertial unit has a drift of 0.01°/hr. After a flight of 12 hrs with a ground speed of 500 kt, the error on the aeroplane position is approximately:

A – 6 NM
B – 1 NM
C – 12 NM
D – 60 NM

Ref: AIR: atpl;

Ans: C

14664. 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 – gyroscopic inertia, earth precession and pendulous oscillation
B – vertical velocities, earth precession, centrifugal forces and transport drift
C – movements in the yawing plane, secondary precession and pendulous oscillation
D – aircraft manoeuvres, earth rotation, transport wander and coriolis

Ref: AIR: atpl;

Ans: D

15449. 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 – The platform iskept stable relative to the earth mathematically rather than mechanically but it has a longer spin up time
B – It does not suffer from lock in error and it is insensitive to gravitational (g) forces
C – There is little or no spin up time and it does not suffer from lock in error
D – There is little or no spin up time and it is insensitive to gravitational (g) forces

Ref: AIR: atpl;

Ans: D

25136. Comparing the Present Position display on the Boeing 737-400 FMC, you note that there is a 10-mile difference between the left IRS and the right IRS positions. This means that:

A – One system is in IRS ONLY NAV operation and the other has the VHF Nay Radios selected to AUTO
B – No special significance – this is normal
C – At least one of the IRS is drifting
D – One position has been computer generated from radio nay positions whilst the other is raw IRS

Ref: AIR: atpl;

Ans: C

25137. Within the platform levelling loop of an earth-vertical referenced INS:

A – The levelling signals are unbounded, with a period of 84.4 seconds
B – The levelling signals are bounded with a period of 84.4 minutes
C – The levelling signals are unbounded, with a period of 84.4 minutes
D – The levelling signals are bounded, with a period of 84.4 seconds

Ref: AIR: atpl;

Ans: B

061-06-04 Flight deck equipment and operation

8720. An aircraft equipped with an Inertial Navigation System (INS) flies with INS 1 coupled with autopilot 1. Both inertial navigation systems are navigating from waypoint A to B. The inertial systems Central Display Units (CDU) shows:

-XTK on INS 1 = 0 –XTK on INS 2 = BL (XTK = cross track)

From this information it can be deduced that:

A – the autopilot is unserviceable in NAV mode
B – only inertial navigation system No. 2 is drifting
C – only inertial navigation system No. 1 is drifting
D – at least one of the inertial navigation systems is drifting

Ref: AIR: atpl;

Ans: D

8731. 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

Ref: AIR: atpl;

Ans: A

8734. 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 will only differ if one of the systems has been decoupled because of a detected malfunction
B – The positions will be the same because they are an average of three different positions
C – The positions are likely to differ because they are calculated from different sources
D – The positions will only differ if an error has been made when inputting the present position at the departure airport

Ref: AIR: atpl;

Ans: C

8736. In the Boeing 737-400 FMS, the CDU is used to:

A – manually initialise the IRS and FMC with dispatch information
B – automatically initialise the IRS and FMC with dispatch information
C – manually initialise the Flight Director System and FMC with dispatch information
D – manually initialise the Flight Director System, FMC and Autothrottle with dispatch information

Ref: AIR: atpl;

Ans: A

8737. The period of validity of an FMS database is:

A – 56 days
B – one week
C – 28 days
D – varies depending on the area of operational cover

Ref: AIR: atpl;

Ans: C

8740. What are the positions (in the order left to right) on the Boeing 737-400 IRS MSU mode selector?

A – OFF STBY ALIGN NAV
B – OFF ON ALIGN NAV
C – OFF STBY ATT NAV
D – OFF ALIGN NAV ATT

Ref: AIR: atpl;

Ans: D

8744. 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 – TK/GS
B – HDG/DA
C – DSRTK/STS
D – XTK/TKE

Ref: AIR: atpl;

Ans: C

8748. On a triple-fit IRS system, present positions on the CDU:

A – will only differ if one IRS has been decoupled due to a detected malfunction
B – will only differ if an initial input error of aircraft position has been made
C – are likely to differ as the information comes from different sources
D – will not differ as the information is averaged

Ref: AIR: atpl;

Ans: C

8750. Aircraft position determined by radio navigation in an FMC is derived from:

A – VOR/DME
B – DME ranges and/or VOR/ADF bearings
C – VOR/ADF
D – DME only

Ref: AIR: atpl;

Ans: D

8755. 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 – Bearing and distance
B – Geographic co-ordinates
C – Hexadecimal
D – By waypoints name

Ref: AIR: atpl;

Ans: B

8756. When is the last point at which an INS or IRS may be selected to NAV mode?

A – After passengers and freight are aboard
B – Immediately prior to push back or taxi from the gate
C – At the holding point
D – On operation of the TOGA switch when opening the throttles for the take-off

Ref: AIR: atpl;

Ans: B

8758. 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 – ON – ALIGN – NAV
B – OFF – ALIGN – NAV – ATT
C – OFF – STBY – ALIGN – NAV
D – OFF – ALIGN – ATT – NAV

Ref: AIR: atpl;

Ans: B

8761. On the IRS, selection of ATT mode gives?

A – attitude and heading
B – altitude, heading, and groundspeed
C – altitude, attitude, and heading
D – attitude information only

Ref: AIR: atpl;

Ans: A

8777. On an INS, what is the output of the E/W second-stage integrator?

A – Velocity N/S
B – Distance N/S
C – Distance E/W
D – Velocity E/W

Ref: AIR: atpl;

Ans: C

8787. Gyro-compassing of an inertial reference system (IRS) is accomplished with the mode selector switched to:

A – ATT/REF
B – STBY
C – ALIGN
D – ON

Ref: AIR: atpl;

Ans: C

8791. Which of the following statements concernikng 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

Ref: AIR: atpl;

Ans: A

8804. What method of entering waypoints can be used on all INS equipments?

A – Distance and bearing
B – Waypoint name
C – Navaid identifier
D – Latitude and longitude

Ref: AIR: atpl;

Ans: D

061-06-05 INS operation

8719. Gyro-compassing in an INS:

A – is possible in flight as the gyros can differentiate between acceleration due to aircraft movement and initial alignment errors
B – is not possible in flight as the gyros can differentiate between acceleration due to aircraft movement and initial alignment errors
C – is not possible in flight as the gyros cannot differentiate between acceleration due to aircraft movement and initial alignment errors
D – is possible in flight as the gyros cannot differentiate between acceleration due to aircraft movement and initial alignment errors

Ref: AIR: atpl;

Ans: C

8722. In what formats can created waypoints be entered into the scratch pad of the B737-400 FMS?

A – Place Bearing/Distance, Place Distance/Place Distance, Along-Track Displacement, Latitude and Longitude
B – Place Bearing/Distance, Place Bearing/Place Bearing, Across-Track Displacement, Latitude and Longitude
C – Place Bearing/Distance, Place Bearing/Place Bearing, Along-Track Displacement, Latitude and Longitude
D – Place, Place Bearing/Distance, Along-Track Displacement, Latitude and Longitude

Ref: AIR: atpl;

Ans: C

8724. The following points are entered into an inertial navigation system (INS).
WPT 1:60ºN 30ºW; WPT 2:60ºN 20ºW; WPT 3:60ºN 10ºW
The 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 9º increase
B – zero
C – a 9º decrease
D – a 4º decrease

Ref: AIR: atpl;

Ans: C

8726. 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 (55º00N 020º00W) and No. 4 (55º00N 030º00W). With DSRTK/STS selected on the CDU, to the nearest whole degree, the initial track read-out from waypoint No. 3 will be:

A – 278º
B – 274º
C – 266º
D – 270º

Ref: AIR: atpl;

Ans: B

8729. The sensors of an INS measure:

A – precession
B – velocity
C – the horizontal component of the earth's rotation
D – acceleration

Ref: AIR: atpl;

Ans: D

8738. What is the source of magnetic variation information in a Flight Management System (FMS)?

A – Magnetic variation is calculated by each IRS based on the respective IRS position and the aircraft magnetic heading
B – The main directional gyro which is coupled to the magnetic sensor 9flux valve) positioned in the wing-tip
C – The FMS calculates MH and MT from the FMC position
D – Magnetic variation information is stored in each IRS memory; it is applied to the true heading calculated by the respective IRS

Ref: AIR: atpl;

Ans: D

8741. Where and when are the IRS positions updated?

A – During flight IRS positions are automatically updated by the FMC
B – Only on the ground during the alignment procedure
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)

Ref: AIR: atpl;

Ans: B

8747. An aircraft at FL 140, 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 speed must be reduced by:

A – 15 knots
B – 25 knots
C – 30 knots
D – 20 knots

Ref: AIR: atpl;

Ans: D

8753. 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 – 30°S to 25°S
B – 60°N to 50°N
C – 30°S to 30°N
D – 60°N to 80°N

Ref: AIR: atpl;

Ans: D

8769. An aircraft travels from point A to point B, using the autopilot connected to the aircraft's inertial system. The co-ordinates 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°

Ref: AIR: atpl;

Ans: C

8773. 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. 3 (60°00S 070°00W) to No. 3 (60°00S 080°00W). Comparing the initial track (°T) at 070°00W and the final track (°T) at 080°00W, the difference between them is that the initial track is approximately:

A – 9° greater than the final one
B – 5° greater than the final one
C – 9° less than the final one
D – 5° less than the final one

Ref: AIR: atpl;

Ans: C

8790. Which of the following statements concerning the position indicated on the Inertial Reference System (IRS) display is correct?

A – It is updated when go-around is selected on take-off
B – It is constantly updated from information obtained by the FMC
C – It is not updated once the IRS mode is set to NAV
D – The positions from the two IRSs are compared to obtain a best position which is displayed on the IRS

Ref: AIR: atpl;

Ans: C

8791. 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

Ref: AIR: atpl;

Ans: A

21453. 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°W
WPT 2: 60°N 020°W

When 025°W is passed the latitude shown on the display unit of the inertial navigation system will be:

A – 60° 00.0'N
B – 59° 49.0'N
C – 60° 11.0'N
D – 60° 05.7'N

Ref: AIR: atpl;

Ans: D

25576. What is the sequence of pages on start-up of the Boeing 737-400 FMS?

A – POS INIT, IDENT, DEPARTURES
B – IDENT, POS INIT, RTE
C – POS INIT, RTE, IDENT
D – IDENT, POS INIT, DEPARTURES

Ref: AIR: atpl;

Ans: B