



Headquarters Air Cadets Examination

Staff Cadet

Pilot Navigation

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Serial: 32

1. Use black or dark blue pen, NOT pencil.
2. Mark one answer per question with a cross.
3. If you wish to change an answer, cancel the original mark and mark another single answer.

☒ A selected answer.

☐ A cancelled answer.

Mark:

Name and Initials _____

Date of Exam _____

Date of Birth _____

Squadron/Unit _____

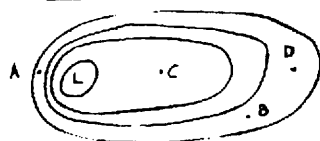
Wing _____

1 How does the met office pass information about airfield weather to aircrew:

- a ☐ By using TAFs and METARs
- b ☐ By RADAR
- c ☐ By TELEVISION
- d ☐ By TEMPOs and BECMGs

2 Where in this pressure diagram will the wind speed be greatest:

- a ☐ A
- b ☐ B
- c ☐ C
- d ☐ D



3 How is drift shown in the triangles of velocities:

- a ☐ The angle between heading and wind direction
- b ☐ The angle between track and wind direction
- c ☐ It is not shown at all
- d ☐ The angle between track and heading

4 Flying at a typical airliner cruising level of 34000 feet, what would you expect the atmospheric pressure outside the a/c to be:

- a ☐ One half of sea level pressure
- b ☐ One tenth of sea level pressure
- c ☐ Three quarters of sea level pressure
- d ☐ One quarter of sea level pressure

5 In a TAF what would -SHSN mean:

- a ☐ Sleet
- b ☐ Light snow showers
- c ☐ Snow all day
- d ☐ Heavy snow

6 What is the best thing for an aviation to do about thunderstorms:

- a ☐ Pass downwind of them
- b ☐ Use the radar to go through the centre
- c ☐ Avoid them by a wide margin
- d ☐ Stay on the ground

7 All long range nav aids work on a similar basis, what do the equipments use to calculate position:

- a ☐ Phase difference on various radials
- b ☐ Time interval between successive fixes
- c ☐ Old moore's almanac
- d ☐ Time interval between synchronized signals

8 Both VOR/DME and TACAN give the same information, is it:

- a ☐ True heading and range to the beacon
- b ☐ Magnetic track and groundspeed
- c ☐ Magnetic bearing and range to beacon
- d ☐ Airway centreline and distance

9 What is the name of the first worldwide fixing aid:

- a ☐ GPS
- b ☐ Sputnik
- c ☐ Loran
- d ☐ Omega

10 If the highest obstacle near your track is 1750', what is your safety altitude:

- a ☐ 3800ft
- b ☐ 2700ft
- c ☐ 2800ft
- d ☐ 1800ft

11 How many elements of the vector triangle are needed in order that the triangle may be solved:

- a ☐ 4
- b ☐ 3
- c ☐ half
- d ☐ 6

12 Most large a/c have cabin pressurization systems to maintain air pressure inside the a/c fairly close to sea level pressure. Why is this:

- a ☐ It reduces the a/c fuel consumption
- b ☐ It keeps the cabin warm
- c ☐ It helps the stewardesses keep the passengers calm
- d ☐ It maintains the oxygen level

13 Which of the following is not one of the hazards to a/c that is found in thunderstorms:

- a ☐ TURBULENCE
- b ☐ ICING
- c ☐ ISOBARS
- d ☐ LIGHTNING

14 What is the main difference between map reading on the ground and in the air:

- a ☐ The scale of maps is so different
- b ☐ You don't have to wear an oxygen mask on the ground
- c ☐ There is no time in the air to discuss where we are
- d ☐ You do not need waterproof maps in the air

15 The radio compass works on the same principle as which of these equipments:

- a ☐ A small portable radio
 - b ☐ A gyro magnetic compass
 - c ☐ A radio 1 transmitter
 - d ☐ A radio sonar bouy
-

16 Which of the following would you not expect to find on an air traffic control flight plan:

- a ☐ Destination
 - b ☐ Windforecast
 - c ☐ Callsign
 - d ☐ Persons on board
-

17 What units would you expect to see on the fuel gauge of a eurofighter

- a ☐ Kilogrammes
 - b ☐ Imperial gallons
 - c ☐ Pounds
 - d ☐ US gallons
-

18 Why must you be very careful if using an OS map to work out safety altitudes:

- a ☐ The map is out of date
 - b ☐ The grid is based on kilometre squares
 - c ☐ The map does not cover a large enough area
 - d ☐ The elevations are in metres
-

19 The main difference between a TAF and a METAR is:

- a ☐ One never includes the wind velocity
 - b ☐ One is for a longer time period than the other
 - c ☐ One is a report, the other is a forecast
 - d ☐ One TAF is more reliable
-

20 What causes the air pressure at sea level:

- a ☐ The weight of the air above it
 - b ☐ All the aircraft flying around
 - c ☐ The movement of highs and lows on the weather chart
 - d ☐ Depression
-

21 When choosing natural (rather than man-made) features for map reading, what characteristic is most important:

- a ☐ Their contrast and colour
 - b ☐ Whether they are frozen or not
 - c ☐ Their size
 - d ☐ How they are shown on the map
-

22 The best passive navigation system is:

- a ☐ Astro alone
 - b ☐ Triple inertial with GPS
 - c ☐ Loran with astro
 - d ☐ Twin inertial with omega
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23 The radio compass enables you to take what kind of fix:

- a ☐ VOR/DME fix
 - b ☐ 3 position line fix
 - c ☐ Astro heading fix
 - d ☐ Tacan fix
-

24 What is the quickest and most accurate way of solving the vector triangle:

- a ☐ Using a word processor
 - b ☐ Using the Dalton DR computer
 - c ☐ Mentally
 - d ☐ Using a sheet of graph paper
-

25 If the fuel tanker has its fuel delivered guages calibrated in different units from the a/c fuel guages, what method of conversion would the crew use:

- a ☐ A calculator
 - b ☐ Any of the above
 - c ☐ A dalton computer
 - d ☐ A fuel wt/volume conversion chart
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