



Headquarters Air Cadets Examination

GROUP 6

Staff Cadet

32/4 Pilot Navigation

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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 When the temperature drops to the dew point, but is still above freezing, what kind of weather can you expect:

- a ☐ Fog
- b ☐ Rain
- c ☐ Sleet
- d ☐ Thunderstorms

3 For what reasons do we need to calculate leg times and ETA's on our Pilot Navigation card:

- a ☐ Air traffic and for astro calculations
- b ☐ To calculate safety altitude and variation
- c ☐ Fuel and de-icing fluid
- d ☐ Fuel and air traffic

4 If an a/c fuel tank was filled with water, it would contain 5000 pounds of water. If this water is now replaced by fuel at an SG of 0.80, how heavy would the fuel be:

- a ☐ 4000 pounds
- b ☐ 400 gallons
- c ☐ 5000 pounds
- d ☐ 8000 pounds

5 In a TAF what would -SHSN mean:

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

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

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

7 In a simple a/c, what piece of equipment do we rely on to assist with map reading:

- a ☐ The magnifying glass
- b ☐ The watch
- c ☐ The radar
- d ☐ The gyro magnetic compass

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 ☐ Airway centreline and distance
- d ☐ Magnetic bearing and range to beacon

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

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

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

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

11 As well as solving the triangle of velocities, what other information is logged on the Pilot Navigation log card:

- a ☐ Time for each leg and a/c registration
- b ☐ Met forecast of icing and thunderstorms
- c ☐ Amount of fuel received from tanker
- d ☐ Time for each leg and fuel required

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 maintains the oxygen level
- d ☐ It helps the stewardesses keep the passengers calm

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

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

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

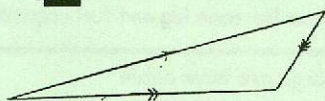
- a ☐ The scale of maps is so different
- b ☐ You do not need waterproof maps in the air
- c ☐ There is no time in the air to discuss where we are
- d ☐ You don't have to wear an oxygen mask on the ground

15 What is the major advantage of Astro Navigation over more modern systems:

- a ☐ It can only be used by naval aviators
- b ☐ It is easier to use
- c ☐ It is more accurate
- d ☐ It cannot be jammed

16 The diagram shows a vector triangle for a flight along an easterly track. With the N.E. wind, which of the following is true:

- a ☐ The TAS is less than the groundspeed
- b ☐ Without doppler radar, nothing is certain
- c ☐ The heading is approximately 080 degrees
- d ☐ The a/c experiences port drift



17 In the triangle of velocities, which vector represents the wind velocity:

- a ☐ The angle between track and heading
- b ☐ The vector with two arrowheads
- c ☐ The vector with one arrowhead
- d ☐ The vector with three arrowheads

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

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

19 If you saw the term CAVOK in weather report, what would it mean to you:

- a ☐ Visibility 5km, cloud base 10,000ft
- b ☐ Visibility better than 10km, no cloud below 5,000ft
- c ☐ Combat all-terrain vehicles ok
- d ☐ Visibility better than 5km, no cloud below 10,000ft

20 What causes the air pressure at sea level:

- a ☐ The movement of highs and lows on the weather chart
- b ☐ All the aircraft flying around
- c ☐ The weight of the air above it
- 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 ☐ How they are shown on the map
- c ☐ Their size
- d ☐ Whether they are frozen or not

22 What is the major disadvantage of radar in combat a/c:

- a ☐ It gives away your location
- b ☐ You need a weapon systems operator to use it
- c ☐ It only works at night
- d ☐ It only works at low level

23 The radio compass enables you to take what kind of fix:

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

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

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

25 The country which is changing to metric units most slowly in aviation is:

- a ☐ USA
- b ☐ France
- c ☐ Russia
- d ☐ UK