Headquarters Air Cadets Examination

Leading Cadet
Basic Navigation
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Serial: 85

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.

X A selected answer

X A cancelled answer

Mark:

Name and Initals _____ Date of Exam _____

Date of Birth _____ Squadron/Unit _____ Wing _____

1 What happens to the lines of longitude as they approach the north pole:

a ☐ They follow the grid lines exactly
b ☐ They get closer together
c ☐ They move apart
d ☐ They stay parallel

2 Orientating a map can also be called:

a ☐ Sighting a map
b ☐ Organising a map
c ☐ Setting a map
d ☐ Ranging a map

3 Why is it important to set a map before using it in the field?

a ☐ So that names printed on the map may be read more easily
b ☐ So that a compass can be used to follow the required direction over the ground
c ☐ So that features on the ground seen by the observer can be easily related to features on the map
d ☐ So that distances can be measured more easily

4 Which of the following is not a method for determining north without a compass:

a ☐ Finding wind direction
b ☐ Using the shadow from a stick
c ☐ Finding the pole star from The Plough
d ☐ Using a watch with the sun

5 A freely-suspended magnetic needle will point:

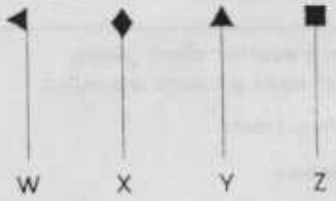
a ☐ To grid north
b ☐ To the geographical north pole
c ☐ To the magnetic north pole
d ☐ Straight down to the ground

6 The position of the magnetic north pole:

a ☐ Is not fixed but changes its position a little every year
b ☐ Only changes when new maps are issued
c ☐ Is fixed and remains in the same place constantly
d ☐ Is the same as the true north pole

7 Which of these symbols represents true north?

a ☐ Y
b ☐ Z
c ☐ X
d ☐ W



8 The angular difference between magnetic north and grid north on a map is known as:

a ☐ Magnetic deviation angle
b ☐ Grid deviation angle
c ☐ Compass deviation angle
d ☐ Grid magnetic angle

9 Where is information on the grid magnetic angle located on an M726 OS map:

a ☐ In the extreme left hand side of the map
b ☐ On the back of the map
c ☐ At the centre of the bottom margin
d ☐ At the centre of the top margin

10 On a Silva walking compass what colour is the magnetic needle:

a ☐ White and blue
b ☐ Red and white
c ☐ Red and black
d ☐ Blue and red

11 Which of the following would be most likely to cause magnetic deviation if close to a compass:

a ☐ A plastic water bottle
b ☐ A tree
c ☐ Aluminium tent pole
d ☐ A cattle grid

12 The final step in setting a map with a compass is to:

a ☐ Turn the compass only until it is pointing at north
b ☐ Turn the map and compass together until the needle is inside the orientating arrow
c ☐ Turn the map only until it is pointing north
d ☐ Turn the map and compass together until the needle is pointing south

13 To take a bearing between 2 features on a map you would first place the compass on the map so that its longest edge runs through both features and its direction of travel arrow points in your intended direction of travel. You would then:

a ☐ Turn the capsule on the compass so that its orienting lines are parallel to the north-south grid lin
b ☐ Turn the capsule on the compass until the needle falls into the orienting arrow
c ☐ Turn the map and compass together until the needle falls into the orienting arrow
d ☐ Turn the capsule on the compass to deduct the grid magnetic angle

4 The grid bearing between 2 features on a map was measured to be 040° (Grid). If the grid magnetic angle is 6° west of grid north, what is the magnetic bearing?

a ☐ 040°
b ☐ 046°
c ☐ 043°
d ☐ 034°

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15 A Roamer would be used in finding:

a ☐ The direction of a track
b ☐ A relative bearing
c ☐ The grid reference point
d ☐ The average gradient

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16 You are at a point where variation is 1° W, and Grid Magnetic Angle is 6° W. If the compass bearing of a trig point is 150° what is its Grid bearing?

a ☐ 157°
b ☐ 156°
c ☐ 143°
d ☐ 144°

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17 How much time should be added to a journey on foot for every 200 metres climbed, using Naismith's rules?

a ☐ 20 minutes
b ☐ 25 minutes
c ☐ 15 minutes
d ☐ 30 minutes

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18 Measuring distances accurately whilst out walking helps you particularly to:

a ☐ Choose the shortest route
b ☐ Reduce the area of uncertainty in your position
c ☐ Calculate magnetic variation
d ☐ Calculate the gradient

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19 An attack point would be:

a ☐ Any prominent feature close to your objective
b ☐ The summit of any hill
c ☐ Any trig point
d ☐ Any prominent feature that can be easily identified

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20 Which of these types of air mass brings cold dry weather with little or no cloud to the British Isles in winter?

a ☐ Polar continental via the short sea-track
b ☐ Polar continental via the long sea route
c ☐ Returning polar maritime
d ☐ Polar maritime

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21 When a cold air mass catches up with another cold air mass, thereby undercutting a comparatively warm air mass and pushing it upwards off the Earth's surface, the weather system is called:

a ☐ A ridge of high pressure
b ☐ A non-frontal depression
c ☐ A cold stream
d ☐ An occluded front

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22 An area of low pressure is also known as:

a ☐ A warm front
b ☐ An anticyclone
c ☐ A depression
d ☐ An occluded front

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23 Lines on a weather chart joining points of equal pressure are called:

a ☐ Warm fronts
b ☐ Isobars
c ☐ Occuled fronts
d ☐ Cold fronts

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24 Upper winds are generally responsible for:

a ☐ Movement of a depression
b ☐ Poor weather
c ☐ The strength of the surface wind
d ☐ Fine weather

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25 Stratus is what type of cloud:

a ☐ Featureless layer
b ☐ Thread-like
c ☐ Lumpy or heaped
d ☐ Hair-like
