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Q203 - Navigation General: Near Coastal

1. According to Buys Ballot's Law, when an observer in the Southern Hemisphere experiences a northwest wind, where is the center of the low pressure located?

- **South-Southwest**
- East-Northeast
- East-Southeast
- West-Southwest

Note:

According to Buys Ballot's Law in the Southern Hemisphere, a northwest wind indicates that the low-pressure center is located south-southwest of the observer.

2. How can the accuracy of an azimuth circle be checked?

- Ensuring that the alignment marks on the inner face of the circle are in line with those on the repeater on relative bearings of 000° and 090°
- Aligning the relative bearing markings so that 000° is on the lubber's line and the line of sight passes over the center of the compass
- Sighting a terrestrial range in line and comparing the observed bearing against the charted bearing
- **Comparing observed azimuths at different altitudes with computed values at the times of observation to see if the difference is constant**

Note:

The accuracy of an azimuth circle is verified by comparing observed azimuths of celestial bodies at different altitudes with computed true azimuths to determine if the resulting difference remains constant. This method isolates instrument error from compass or gyro error, ensuring the circle's scale and sight line are consistent.

3. What will act to dissipate fog?

- Advection of warm air over a colder surface
- **Downslope motion of an air mass along a coast**
- Rain that is warmer than air
- Upwelling cold water

Note:

Downslope motion warms air adiabatically, decreasing relative humidity and causing fog to evaporate.

4. Which action is the safest and most prudent procedure to follow while navigating in the vicinity of a tropical cyclone?

- Batten down and prepare to ride out the storm
- Continue to navigate farther from the coast
- Always navigate towards the coast by the most direct route
- **Take positive steps to avoid it if possible**

Note:

The safest procedure when navigating near a tropical cyclone is to avoid it entirely if possible, prioritizing hazard avoidance over schedule or convenience.

5. Which aid is NOT marked on a chart with a magenta circle?

- Radar transponder beacon
- Radio beacon
- Radar station
- **Aero light**

Note:

Aero lights are not marked with a magenta circle on nautical charts; this symbol is reserved for radio and radar-based aids to navigation such as radar transponder beacons, radio beacons, and radar stations.

6. An air mass that has moved down from Canada would most likely have which symbols?

- **cPk**
- cTw
- mTk
- cTk

Note:

cPk correctly identifies a cold, dry continental polar air mass originating in Canada and colder than the surface it overruns.

7. Which is TRUE of an alternating light?

- It is used as a replacement for another light
- It shows a light with varying lengths of the lighted period
- It marks an alternate lesser used channel
- **It shows a light that changes color**

Note:

An alternating light is defined as a light that displays different colors in a regular sequence. Therefore, the correct answer is that it shows a light that changes color.

8. Which is a characteristic of anticyclones?

- High winds and cloudiness
- Overcast skies
- **Dry, fair weather**
- Gustiness and continuous precipitation

Note:

Anticyclones are high-pressure systems characterized by sinking air, which inhibits cloud formation and precipitation, resulting in dry, fair weather.

9. The appearance of nimbostratus clouds in the immediate vicinity of a ship at sea would be accompanied by which of the following conditions?

- Severe thunderstorms
- High winds and rising sea
- **Rain and poor visibility**
- Dropping barometric pressure and backing wind in the Northern Hemisphere

Note:

Nimbostratus clouds produce widespread, steady precipitation and reduced visibility. This is due to their nature as thick, layered clouds associated with continuous rain or snow.

10. The approximate distance to a storm center can be determined by noting the hourly rate of fall of the barometer. If the rate of fall is 0.08 - 0.12 inches, what is the approximate distance to the storm center?

- 50 to 80 miles
- **80 to 100 miles**
- 100 to 150 miles
- 150 to 250 miles

Note:

A barometric fall rate of 0.08–0.12 inches per hour indicates a storm center approximately 80–100 miles away, according to standard marine storm-distance tables.
