

1-4638

1) **BOTH INTERNATIONAL AND INLAND: A power-driven vessel is underway and fishing with trolling lines. This vessel \_\_\_\_\_.**

**A. must keep out of the way of sailing vessels**

*Correct answer: By definition, this vessel is not "engaged in fishing" because it is using "trolling lines (or other fishing apparatus) which do not restrict maneuverability." Therefore, the rule for an ordinary power-driven vessel applies, mandating that the vessel trolling keeps clear of the vessel under sail.*

**B. must sound a one prolonged, two short blast signal in restricted visibility**

*Incorrect: This is the warning signal to be sounded by vessels "engaged in fishing." Since this vessel is not engaged in fishing, it shall sound a signal of one prolonged blast, while underway and making way through the water, or a signal of two prolonged blasts if not making way.*

**C. is the stand-on vessel when overtaking power-driven vessels**

*Incorrect: Any vessel overtaking another is a give-way vessel. Therefore, if this vessel were to overtake another, it "shall, so far as possible, take early and substantial action to keep well clear."*

**D. All of the above**

*Incorrect: Only one, of the three answers above, is correct.*

3-362

2) **Which statement about a simple conic chart projection is TRUE?**

CONIC PROJECTIONS -

*Simple Conic: A single tangent cone is used. The latitude at which the cone is tangent is the "standard parallel".*

*Secant Conic: The cone is tangent at two latitudes i.e., two standard parallels, cutting a "secant" of the earth.*

*"Lambert Conformal" Conic: A secant conic in which the spacing of the parallels is altered so that the distortion is the same along these parallels as it is along the meridians.*

*Polyconic: A series of cones used to eliminate the limitation in latitude that can exist with a secant cone and improve quality of presentation with regard to equal-area.*

**A. It is an equal-area projection.**

*Incorrect: Polyconic projections are used in higher latitudes where equal-area is desired. However, true equal-area is not possible with any conic projection.*

**B. It is a conformal projection.**

*Incorrect: Conic projections are not customarily used in practical navigation, except in high latitudes where the distortion in area of a Mercator projection would be extreme and detrimental. In this case, Lambert conformal projections are used.*

**C. Meridians appear as curved lines with this type of projection.**

*Incorrect: All meridians (lines of longitude), indicated on conic projections, appear as straight lines, converging at the apex of the cone(s).*

**D. The scale is correct along any meridian.**

*Correct answer: The parallels of latitude are concentric circles and the distance along any meridian between consecutive parallels is correct, in relation to the distance on earth. Since the distortion along the standard parallel (where the cone is tangent to the earth) is minimal, a simple conic projection can be used to map an area having a wide spread of longitude if the spread in latitude is relatively small.*

4-3196

**3) What shall be conducted during a fire and boat drill?**

**A. All watertight doors in the vicinity of the drill shall be operated.**

*Correct answer: Title 46 of the Code of Federal Regulations, 46 CFR 199.180, requires "checking the operation of watertight doors, fire doors, . . . in the drill area."*

**B. All lifeboat equipment shall be examined.**

*Incorrect: During the conduct of the fire & boat drills, lifeboats are required to be "lowered" and their engines "operated", as per 46 CFR 199.180. All equipment is only required to be "thoroughly inspected" annually, as per 46 CFR 199.190.*

**C. Fire pumps shall be started and all exterior fire main outlets opened.**

*Incorrect: Although the fire pumps are to be started, 46 CFR 199.180(f)(2)(ii) only requires that "two jets of water" need to be used "to determine that the system is in proper working order."*

**D. All of the above**

*Incorrect: Only one, of the three answers above, is correct.*

4-1255

**4) The color of the flare sent up by a submarine indicating that a torpedo has been fired in a training exercise is \_\_\_\_\_.**

**A. white**

*Incorrect: A white flare or star is not a signal that a submarine would send during an exercise. The signal of three white star rockets, fired one minute apart, is a signal from a maritime rescue unit meaning, "You are seen." "Assistance will be given as soon as possible."*

**B. green**

*Correct Answer: Green or black is used, under training exercise conditions only, to indicate that a torpedo has been fired or that the firing of a torpedo has been simulated. By this signal, merchant ships are to be aware of naval activity in their vicinity.*

**C. yellow**

*Incorrect: A yellow flare indicates that the submarine is about to come to periscope depth. Upon sighting this flare, naval surface ships participating in the exercise will terminate antisubmarine tactics and all surface ships will clear the vicinity.*

**D. red**

*Incorrect: A red flare indicates an emergency condition exists with the submarine. The submarine will attempt to surface immediately. In the case of repeated red flares, merchant ships are obligated to notify naval authorities.*

**The line of position determined from a sight with an observed altitude (Ho) of  $88^{\circ}45.0'$  should be \_\_\_\_\_.**

**HIGH ALTITUDE SIGHT -**

This sight was made within a few minutes of local apparent noon (LAN) at a location where the sun is crossing the observer's meridian very close to his/her zenith.

**A. reduced to the meridian and plotted as a latitude line.**

Incorrect: Plotting as a latitude line can only be done if the observer is certain that the observation was made when the celestial body was at its maximum altitude.

**B. calculated as a longitude line**

Incorrect: Calculating longitude is an archaic technique that can only be accomplished if the azimuth of the sun (or other celestial body) is known with certainty as being either  $090^{\circ}$  or  $270^{\circ}$ .

**C. plotted by using an intercept from an assumed position**

Incorrect: At this high of an altitude, the azimuth is changing too rapidly to be calculated and plotted accurately by the assumed position method.

**D. plotted as an arc around the GP of the body.**

Correct Answer: The geographic position (GP) of the celestial body (typically the sun) is the point on earth directly beneath it. It is the point from which an observer would have the sun at his/her zenith. In this case, the observer is 75 nautical miles ( $90^{\circ} - 88^{\circ}45.0'$ ) from the sun's GP. The arc of the circle (drawn on the chart with a compass) is a portion of the circle of equal altitude. All observers on the circumference of this circle would observe the sun at an altitude of  $88^{\circ}45.0'$  at this moment in time.

**When fighting a fire in a space containing an IMO “Class 1” hazardous cargo, the most effective fire fighting procedure is to \_\_\_\_\_.**

**CLASS 1 HAZARDOUS MATERIAL, i.e., EXPLOSIVES –**

This class is defined in the International Maritime Dangerous Goods (IMDG) Code. “Class 1” is similarly defined in 49 CFR 173.50:

”Any substance or article . . . which is designed to function by explosion or which, by chemical reaction within itself, is able to function in a similar manner . . . .”

**A. shut down the ventilation and exclude all air to smother the fire**

Incorrect: This method is effective in fighting a fully engulfed fire by eliminating the supply of oxygen. However, this material may be smoldering and sufficient oxygen may be trapped around the smoldering material, permitting a dangerous situation to continue.

**B. use water from fire hoses or a sprinkler system**

Correct Answer: Water is always best for extinguishing a “general combustible” fire. Given the volatility of this particular material, more than one fire fighting procedure may need to be used. The action indicated in choice “A” or “C” may have to be accomplished first, before a hose team can access the space.

**C. activate the fixed CO2 firefighting system**

Incorrect: Although this is most effective against a visible fire, the extinguishing agent may not be able to penetrate stowed explosives and quell the heat of the smoldering material.

**D. use high-expansion foam**

Incorrect: Foam is ineffective in removing heat. Foam is most effective on fires involving a “flammable liquid” because it is not necessary to penetrate the engulfed liquid, but only to smother the fire by covering the surface.

**The center of floatation of a vessel is \_\_\_\_\_.**

Note: The center of floatation is a point on the waterplane which represents the fulcrum that the vessel pivots about as it trims. As cargo is loaded, the change in trim may be calculated by dividing the moment created by the load by the "moment to trim one inch". Since the shape of the waterplane area of a self-propelled vessel changes with draft, the location of the center of floatation will vary longitudinally as the shape of the plane changes.

**A. the center of volume of the immersed portion of the vessel**

Incorrect: The center of buoyancy is the geometric center of the immersed volume.

**B. the center of gravity of the waterplane**

Correct Answer: This point is the center of gravity of only the waterplane and must not be confused with the (three-dimensional) center of gravity of the vessel. Reference: LaDage and VanGemert, Stability and Trim for the Ship's Officer, Cornell Maritime Press, 1990.

**C. the point at which all the vertical downward forces of weight is considered to be concentrated**

Incorrect: This is the definition of the center of gravity.

**D. the point at which all the vertical upward forces of buoyancy is considered to be concentrated**

Incorrect: This is the definition of the center of buoyancy.

**Vessels should maintain a sharp lookout, especially from December through March, when navigating the right whale's only known calving grounds which lie off the coasts of \_\_\_\_\_.**

Note: In accordance with 50 CFR 224.103, it is unlawful to approach within 500 yards of a right whale. If a right whale is discovered within 500 yards, the vessel must: "Steer a course away from the right whale and immediately leave the area at a slow safe speed."

**A. Nova Scotia**

Incorrect: Northern right whales may be found in the vicinity of Nova Scotia, but only during the summer and autumn months.

**B. Maine and Massachusetts**

Incorrect: This is the locale of the feeding grounds to which most northern right whales migrate for the summer.

**C. Georgia and NE Florida**

Correct Answer: This is the locale of the calving grounds and is designated a "Critical Habitat for Marine Mammals" by 50 CFR 226.203.

**D. California and Mexico**

Incorrect: Northern right whales are not known to inhabit the west coast of North America.