
Q419 - Deck Safety

1. When is firefighting foam most effective?

- When it is kept saturated with low-velocity water fog
- As it mixes with the burning fuel oil
- **When it completely covers the top of the burning liquid**
- If it penetrates to the bottom of the fire

Note:
Foam extinguishes flammable liquid fires by forming a complete surface layer that excludes oxygen and suppresses vapors; therefore, it is most effective when it fully covers the burning liquid.

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2. What is the function of wearing rings found on some centrifugal pumps?

- Absorb erosion of high-velocity discharge stream
- Seal pump shaft against entry of air
- **Isolate the outlet side from the inlet side**
- Dampen the turbulent discharge flow

Note:
Wearing rings in centrifugal pumps isolate the high-pressure discharge side from the low-pressure suction side, minimizing internal leakage and maintaining pump efficiency. They are replaceable components designed to limit flow between these pressure zones, unlike shaft seals or flow dampeners.

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3. How does good housekeeping prevent fires on a vessel?

- Allowing better access in an emergency
- Improving personnel qualifications
- **Eliminating potential fuel sources**
- Eliminating trip hazards

Note:
Good housekeeping prevents fires by eliminating potential fuel sources, directly addressing the 'fuel' component of the fire triangle. Fire prevention focuses on controlling fuel and ignition sources, and good housekeeping practices like cleaning spills and properly storing combustibles reduce the risk of fire ignition or spread. Options related to emergency access, personnel qualifications, and trip hazards address safety and response, not primary fire prevention.

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4. Which of the following conditions represents the appropriate time for setting off distress flares and rockets?

- Immediately upon abandoning the vessel.
- At half-hour intervals.
- At one-hour intervals.
- **Only when there is a chance of them being seen by rescue vessels.**

Note:
Distress flares and rockets should be deployed only when there is a reasonable chance of observation by potential rescuers to conserve limited resources and maximize effectiveness.

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5. Which signaling device(s) is/are required on inflatable liferafts?

- An oil lantern
- A rocket shoulder rifle
- **Hand flares**
- An air horn

Note:
Inflatable liferafts are required to carry hand flares as part of their standard equipment to meet SOLAS and U.S. regulations.

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6. All of the following are part of the fire triangle EXCEPT _____.

- fuel
- oxygen
- heat
- **electricity**

Note:
Electricity is not a component of the fire triangle, which consists of fuel, heat, and oxygen. Electricity can be a source of heat but is not a fundamental element required for combustion.

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7. When compared to low-expansion foam, a high-expansion foam will _____.

- be heavier
- **be drier**
- not cling to vertical surfaces
- be more heat resistant

Note:
High-expansion foam contains more air and less water per volume than low-expansion foam, resulting in a drier foam.

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8. Firefighting foam is only effective when the foam _____.

- penetrates to the bottom of the fire
- is kept saturated with low velocity water fog
- mixes with the burning fuel oil
- **completely covers the top of the burning liquid**

Note:
Firefighting foam is effective only when it completely covers the burning liquid's surface, excluding oxygen and suppressing vapors.

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9. How can the spread of fire be prevented?

- Cooling surfaces adjacent to the fire
- Shutting off the oxygen supply
- Removing combustibles from the endangered area
- **All of the above**

Note:
Fire spread is prevented by reducing heat, fuel, or oxygen. Cooling surfaces, removing oxygen, and removing combustibles are all effective methods; therefore, the correct answer is all of the above.

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10. Convection spreads a fire by _____.

- burning liquids flowing into another space
- **heated gases flowing through ventilation systems**
- the transfer of heat across an unobstructed space
- transmitting the heat of a fire through the ship's metal

Note:
Convection spreads a fire through the movement of heated gases, such as smoke and fumes, flowing through ventilation systems, which ignite combustibles in new areas.
