

Foundations of Maritime Technology

Maritime Technology · Answer Key · 10 Questions

1. Which principle explains why a ship made of steel can float despite the high density of the material?

- A) Bernoulli's principle
- B) Archimedes' principle**
- C) Pascal's law
- D) The Coriolis effect

2. What is the primary function of a bulbous bow on a large commercial vessel?

- A) To increase cargo capacity
- B) To provide stability in rough seas
- C) To reduce wave-making resistance**
- D) To improve propeller thrust

3. In radar technology, what is the term for the process of using radio waves to detect the range and bearing of distant objects?

- A) Sonar
- B) Loran
- C) Radio Direction Finding
- D) Radio Detection and Ranging**

4. Which type of marine propulsion system uses a rotating screw to generate thrust by accelerating a volume of water?

- A) Water jet propulsion
- B) Voith Schneider propeller
- C) Screw propeller**
- D) Cycloidal drive

5. What property of seawater is most significantly affected by changes in temperature and salinity, directly influencing a vessel's buoyancy?

- A) Dynamic viscosity
- B) Thermal conductivity
- C) Density**
- D) Surface tension

6. Which instrument is used to determine the depth of water beneath a vessel by measuring the time interval between the emission and return of an acoustic pulse?

- A) Echo sounder**
- B) Sextant
- C) Gyroscopic compass
- D) Anemometer

7. In naval architecture, what does the 'metacentric height' (GM) of a vessel primarily indicate?

- A) Maximum cargo capacity
- B) Static stability**
- C) Hull corrosion rate
- D) Fuel efficiency

8. What is the purpose of a sacrificial anode attached to a ship's hull?

- A) To reduce drag
- B) To prevent cathodic corrosion**
- C) To improve sonar clarity
- D) To increase structural rigidity

9. Which navigation system utilizes a network of satellites to determine the precise geographical position of a vessel?

- A) Inertial Navigation System
- B) LORAN-C
- C) Global Navigation Satellite System**
- D) Omega Navigation System

10. What is the scientific term for the total weight of water displaced by a floating ship, which must equal the ship's total weight?

- A) Deadweight
- B) Gross Tonnage
- C) Displacement**
- D) Net Tonnage