

Maritime Technology and Marine Ecology

Maritime Technology · Practice Test · 18 Questions

1. What is the primary environmental purpose of using 'scrubber' technology on large cargo ships?

- A) To increase fuel efficiency
- B) To reduce sulfur oxide emissions
- C) To prevent hull biofouling
- D) To track whale migrations

2. Which device is commonly attached to ship hulls to prevent the attachment of barnacles and algae, a process known as biofouling?

- A) Antifouling coatings
- B) Sonar transducers
- C) Stabilizer fins
- D) Anode bars

3. What is the name of the maritime technology used to map the seafloor topography for the purpose of habitat conservation?

- A) Bioluminescence sensors
- B) Multi-beam echosounders
- C) Satellite radar
- D) Thermal imaging

4. How does 'Silent Propulsion' technology in modern research vessels benefit marine life?

- A) It increases water oxygenation
- B) It reduces underwater noise pollution that disrupts cetaceans
- C) It repels predatory sharks
- D) It generates electricity from sea currents

5. What is the primary function of an Oil Water Separator (OWS) onboard a vessel?

- A) To purify drinking water for the crew
- B) To extract oil from bilge water to prevent ocean contamination
- C) To harvest algae for biofuel
- D) To cool the engine during long voyages

6. Which type of maritime technology is used specifically to prevent vessels from accidentally striking whales?

- A) Automatic Identification System (AIS)
- B) Whale Avoidance Sonar systems
- C) Gyrocompass navigation
- D) Ballast water exchange

7. Why do modern ships utilize Ballast Water Management Systems (BWMS)?

- A) To prevent the spread of invasive aquatic species
- B) To increase the ship's speed
- C) To monitor water temperature
- D) To detect schools of fish

8. What is the environmental benefit of using 'Air Lubrication' systems on ship hulls?

- A) To filter microplastics from the ocean
- B) To reduce drag and lower fuel consumption
- C) To oxygenate the water around the ship
- D) To scare away invasive jellyfish

9. What do marine researchers use 'Glider' underwater robots for in maritime technology?

- A) To transport cargo across the ocean
- B) To autonomously collect oceanographic and biological data
- C) To clean oil spills on the surface
- D) To provide Wi-Fi to remote islands

10. In maritime navigation, what do ECDIS systems help protect indirectly by ensuring precise route planning?

- A) Sensitive coral reefs and shallow habitats
- B) The ship's crew from sea sickness
- C) The ship's cargo from spoilage
- D) The ship's engine from rust

11. What is the purpose of cathodic protection (sacrificial anodes) on ship hulls?

- A) To attract schools of fish for research
- B) To prevent corrosion and heavy metal leaching into the water
- C) To provide a surface for sea plants to grow
- D) To generate magnetic fields for navigation

12. Which renewable energy technology is being retrofitted onto large commercial cargo ships to assist propulsion and reduce fuel use?

- A) Tidal turbines
- B) Rigid wing sails
- C) Solar-powered propellers
- D) Geothermal heat exchangers

13. What technology is used by offshore wind farms to minimize environmental impact on seabed ecosystems during installation?

- A) Explosive pile driving
- B) Bubble curtains to dampen sound
- C) Deep-sea dredging
- D) Chemical ocean cleaning

14. What kind of data does a CTD profiler collect for environmental oceanography?

- A) Conductivity, Temperature, and Depth
- B) Cargo, Tonnage, and Direction
- C) Carbon, Titanium, and Density
- D) Current, Time, and Distance

15. What is the function of a 'Moon Pool' on a maritime research vessel?

- A) To act as a swimming pool for the crew
- B) To allow scientific equipment to be lowered into the water without side-ship exposure
- C) To store hazardous marine waste
- D) To stabilize the ship during storms

16. Why are marine autonomous surface ships (MASS) sometimes considered more environmentally friendly?

- A) They do not require human food supplies
- B) They can be optimized for extreme fuel efficiency without crew accommodation needs
- C) They use nuclear power exclusively
- D) They are built entirely from recycled plastic

17. Which maritime technology is primarily used to track the movement of polar bears or seals in ice-covered waters?

- A) Satellite-linked telemetry tags
- B) Deep-sea anchors
- C) Underwater cameras
- D) Large-scale nets

18. What are 'Dynamic Positioning' systems used for when operating near fragile marine environments like reefs?

- A) To maintain a fixed position without using anchors that damage the seabed
- B) To maximize the speed of the vessel
- C) To track the migration of fish schools
- D) To create artificial waves for research