U.S.C.G. Merchant Marine Exam

Apprentice Mate Steersman

Q412-Navigation General-Near Coastal

(Sample Examination)
Choose the best answer to the following Multiple Choice Questions.

1. While steering a course of 150°T, you wish to observe a body for a latitude check. What would the azimuth have to be?
   - (A) 090°T
   - (B) 150°T
   - (C) 240°T
   - (D) 000°T

   If choice D is selected set score to 1.

2. The Light List shows that a navigational light has a nominal range of 19 miles and a height above water of 52 feet (15.8 meters). Your height of eye is 42 feet (12.8 meters) and the visibility is 10.0 miles. At what approximate range will you first sight the light?
   - (A) 16.0 miles
   - (B) 10.0 miles
   - (C) 19.0 miles
   - (D) 17.3 miles

   If choice A is selected set score to 1.

3. What is the distance from the bottom of a wave trough to the top of a wave crest?
   - (A) Wave length
   - (B) Wave depth
   - (C) Wave height
   - (D) Wave breadth

   If choice C is selected set score to 1.

4. The left half of the storm is called the navigable semicircle because __________.
   - (A) the wind speed is decreased by the storm's forward motion
   - (B) the wind tends to blow vessels away from the storms track
   - (C) Both A and B
   - (D) Neither A nor B

   If choice C is selected set score to 1.
5. You are underway on course 050°T and your maximum speed is 12 knots. The eye of a hurricane bears 080°T, 100 miles from your position. The hurricane is moving towards 265°T at 22 knots. If you maneuver at 12 knots to avoid the hurricane, what could be the maximum CPA?

- (A) 76 miles
- (B) 69 miles
- (C) 63 miles
- (D) 56 miles

*If choice C is selected set score to 1.*

6. The path that a vessel is expected to follow, represented on a chart by a line drawn from the point of departure to the point of arrival, is known by which term?

- (A) DR plot
- (B) Track line
- (C) Estimated course
- (D) Heading

*If choice B is selected set score to 1.*

7. The depth of the water is indicated on a chart as 32 meters. What is this equal to?

- (A) 11.50 fathoms
- (B) 12.62 fathoms
- (C) 17.50 fathoms
- (D) 104.99 fathoms

*If choice C is selected set score to 1.*

8. Which item contains information about temporary, short term changes affecting the safety of navigation in U.S. waters?

- (A) Daily Memorandum
- (B) Local Notice to Mariners
- (C) HYDROLANT or HYDROPAC broadcasts
- (D) Summary of Corrections

*If choice B is selected set score to 1.*

9. Fog forms when which condition exists?

- (A) When the air is 50% water saturated
- (B) When the air temperature is equal to, or below the dew point temperature
- (C) When the air temperature is greater than the dew point temperature
- (D) When the air is 90% water saturated

*If choice B is selected set score to 1.*
10. Which term is given to magnetism which is present only when the material is under the influence of an external field?

- (A) Terrestrial magnetism
- (B) Induced magnetism
- (C) Permanent magnetism
- (D) Residual magnetism

*If choice B is selected set score to 1.*

11. A towing vessel is NOT required to be fitted with radar if it is __________.

- (A) used occasionally to assist vessels in distress
- (B) towing alongside
- (C) less than 49 feet in length
- (D) used solely for pollution response

*If choice D is selected set score to 1.*

12. Which buoy may be odd numbered?

- (A) An unlighted can buoy
- (B) A spherical buoy
- (C) A yellow buoy
- (D) A red buoy

*If choice A is selected set score to 1.*

13. You are enroute to assist vessel A. Vessel A is underway at 5.5 knots on course 033°T, and bears 248°T at 64 miles from you. What is the time to intercept if you make 13 knots?

- (A) 4h 55m
- (B) 3h 44m
- (C) 4h 36m
- (D) 3h 59m

*If choice B is selected set score to 1.*

14. Which is TRUE of an occulting light?

- (A) The period of darkness exceeds the period of light
- (B) The periods of light and darkness are equal
- (C) The period of light exceeds the period of darkness
- (D) There is only a partial eclipse of the light

*If choice C is selected set score to 1.*
15. Your radar displays your ship off center. As you proceed on your course, your ship’s marker moves on the PPI scope while echoes from land masses remain stationary. What is this display called?

- (A) Off center
- (B) True motion
- (C) Head up
- (D) Stabilized

*If choice B is selected set score to 1.*

16. Information about the direction and velocity of rotary tidal currents can be found in which publication?

- (A) Nautical Almanac
- (B) Tidal Current Tables
- (C) Mariner’s Guide
- (D) Tide Tables

*If choice B is selected set score to 1.*

17. By convention, what color are the south seeking ends of a compass’ magnet?

- (A) Blue
- (B) Red
- (C) White
- (D) Black

*If choice A is selected set score to 1.*

18. What causes variation in a compass?

- (A) Lack of oil in the compass bearings
- (B) Worn gears in the compass housing
- (C) Magnetism from the earth’s magnetic field
- (D) Magnetism within the vessel

*If choice C is selected set score to 1.*

19. Which is TRUE concerning Hot air?

- (A) The moisture content of air is independent of air temperature
- (B) Hot air holds less moisture than cold air
- (C) Hot air retains the same amount of moisture as cold air
- (D) Hot air holds more moisture than cold air

*If choice D is selected set score to 1.*
20. Which would you expect to see on a lighted preferred-channel buoy?

- (A) A yellow light
- (B) A fixed red light
- (C) A Morse (A) white light
- (D) A composite group-flashing light

*If choice D is selected set score to 1.*

21. How may a spherical buoy be identified?

- (A) It may be green
- (B) It may be lettered
- (C) It may be red
- (D) It may be numbered

*If choice B is selected set score to 1.*

22. Weather systems in the middle latitudes generally travel in which direction?

- (A) East to West
- (B) West to East
- (C) North to South
- (D) South East to North West

*If choice B is selected set score to 1.*

23. Buoys are marked with reflective material to assist in their detection by searchlight. Which statement is TRUE?

- (A) A preferred-channel buoy displays either red or green reflective material to agree with the top band of color.
- (B) A special-purpose mark will display either red or green reflective material to agree with its shape.
- (C) All reflective material is white because it is the most visible at night.
- (D) A safe-water buoy will display red and white vertical stripes of reflective material.

*If choice A is selected set score to 1.*

24. You are sailing south on the Intracoastal Waterway (ICW) when you sight a red nun buoy with a yellow triangle painted on it. Which statement is TRUE?

- (A) Geometric symbols such as squares and triangles replace letters and numbers on ICW aids to navigation.
- (B) The yellow triangle identifies a sharp turn (over 60°) in the channel.
- (C) The ICW and another waterway coincide in this geographical area.
- (D) This is an information or regulatory buoy that also has lateral significance.

*If choice C is selected set score to 1.*
25. How is the intensity of a light expressed in the Light Lists?

- (A) Luminous range
- (B) Nominal range
- (C) Geographic range
- (D) Meteorological range

*If choice B is selected set score to 1.*

26. In shallow water, waves that are too steep to be stable, causing the crests to move forward faster than the rest of the wave. This occurrence describes which term?

- (A) Breakers
- (B) Rollers
- (C) White caps
- (D) Surfers

*If choice A is selected set score to 1.*

27. The ECDIS must have the capability to preserve the record of the voyage track. How many hours of the previous track are required to be maintained?

- (A) 4 hours
- (B) 6 hours
- (C) 12 hours
- (D) 24 hours

*If choice C is selected set score to 1.*

28. Weather patterns in the Gulf of Mexico area of the United States are _____.

- (A) extremely hot in summer
- (B) tropical over Florida and subtropical over the rest of the Gulf Coast area
- (C) those of a tropical region
- (D) those of a transition zone between tropical and a temperate area

*If choice D is selected set score to 1.*

29. Weather information provided by the National Weather Service (NWS) advisories should be used along with which other source of information?

- (A) Weather maps and local knowledge
- (B) Any U.S. Coast Pilot
- (C) The local Notice to Mariners
- (D) The Tide Tables and Tidal Current Tables

*If choice A is selected set score to 1.*
30. Which term is given to a light that has a light period shorter than its dark period?

- (A) Pulsating
- (B) Flashing
- (C) Occulting
- (D) Alternating

If choice B is selected set score to 1.

31. Which clouds is a thin, whitish, high cloud popularly known as "mares' tails"?

- (A) Altostratus
- (B) Cumulus
- (C) Cirrostratus
- (D) Stratus

If choice C is selected set score to 1.

32. What publication has information on the climate, distances, navigation regulations, outstanding landmarks, channels and anchorages of Long Island Sound?

- (A) Pilot Chart
- (B) Sailing Directions
- (C) Coast Pilot
- (D) Light List

If choice C is selected set score to 1.

33. Isobars on a weather map are useful in predicting which element of the weather?

- (A) The dew point
- (B) The relative humidity
- (C) The wind velocity
- (D) The temperature

If choice C is selected set score to 1.

34. In illustration D045NG below, a green-and-red banded daymark, with the uppermost band green, will have which of the following shapes?

- (A) A
- (B) B
- (C) C
- (D) D

If choice A is selected set score to 1.
35. Which name is given to the pressure-sensitive element of an aneroid barometer?

- (A) Sylphon cell
- (B) Constant pressure capsule
- (C) Pressure bellows
- (D) Column of mercury

*If choice A is selected set score to 1.*

36. What enables you to estimate the bearing of a storm’s center?

- (A) Pascal’s Law
- (B) An educated guess
- (C) The left-hand rule
- (D) Buys Ballot’s Law

*If choice D is selected set score to 1.*

37. Your vessel will be entering the navigable waters of the United States. You are required by regulations to take which action?

- (A) Test the primary and secondary steering systems no more than 8 hours before entering
- (B) Have a copy of Radio Navigational Aids in the pilot house
- (C) Check the magnetic compass for the correct deviation
- (D) Correct the charts of the area to be transited using the Notice(s) to Mariners or foreign equivalent reasonably available

*If choice D is selected set score to 1.*

38. Radar makes the most accurate determination of the __________.

- (A) shape of a target
- (B) distance to a target
- (C) size of a target
- (D) direction of a target

*If choice B is selected set score to 1.*

39. What publication contains information about the port facilities in Cadiz, Spain?

- (A) United States Coast Pilot
- (B) Sailing Directions
- (C) Nautical Index
- (D) World Port Index

*If choice D is selected set score to 1.*
40. Which Naval Control of Shipping publication should be aboard your vessel?
   - (A) NWP-14, "Amphibious Operations"
   - (B) PUB 102, "International Code of Signals"
   - (C) ATP-2, Volume II "Allied Control of Shipping Manual - Guide to Masters"
   - (D) ATP-1, Volume II "Allied Tactical Signals"

   *If choice C is selected set score to 1.*

41. Which feature, when set to zero, might allow a GPS unit to have an accuracy equivalent to Precise Positioning Service receiver capability?
   - (A) Auto-correlation
   - (B) Transit
   - (C) Anti-spoofing
   - (D) Selective Availability

   *If choice D is selected set score to 1.*

42. Your ARPA has two guard zones. What is the purpose of the inner guard zone?
   - (A) Alert the watch officer that a vessel is approaching the preset CPA limit
   - (B) Warn of small targets that are initially detected closer than the outer guard zone
   - (C) Sound an alarm for targets first detected within the zone
   - (D) Guard against target loss during critical maneuvering situations

   *If choice B is selected set score to 1.*

43. Which time meridian is used for tide computations in New York Harbor?
   - (A) 75°00'W
   - (B) 82°30'W
   - (C) 52°30'W
   - (D) 60°00'W

   *If choice A is selected set score to 1.*

44. You are steaming along the coast of Ireland in the Irish Sea. You sight a lighted buoy with a white flashing light showing a group of two flashes. The buoy indicates you should take which action?
   - (A) You must pass north of the buoy
   - (B) You must pass south of the buoy
   - (C) You should pass well clear on either side of the buoy
   - (D) You must pass the buoy close to starboard

   *If choice C is selected set score to 1.*
45. You wish to measure the distance on a Mercator chart between a point in latitude 43°30'N and a point in latitude 40°30'N. To measure 30 miles at a time, where should you set the points of the dividers to obtain the most accurate measurement?

- (A) 41°30' and 42°00'
- (B) 41°45' and 42°15'
- (C) 42°00' and 42°30'
- (D) 42°15' and 42°45'

*If choice B is selected set score to 1.*

46. Which is TRUE concerning the regions of the "horse latitudes"?

- (A) It has abundant blue sea grass vegetation
- (B) The region has light airs and calms
- (C) They have brisk prevailing winds
- (D) High clouds are common in this area of high pressure

*If choice B is selected set score to 1.*

47. In illustration D051NG below, why was the position labeled "D" plotted?

- (A) The vessel's speed changed at 1125
- (B) A dead reckoning position is plotted within 30 minutes of a running fix
- (C) A dead reckoning position is plotted for each course change
- (D) All of the above

*If choice C is selected set score to 1.*

48. Who should be consulted for changing conditions of controlling depths in major channels?

- (A) U.S. Army Corps of Engineers
- (B) U.S. Coast Guard
- (C) National Ocean Service
- (D) National Geospatial-Intelligence Agency

*If choice A is selected set score to 1.*

49. Which is one of the advantages of a vessel utilizing a NAVTEX unit to receive MSI?

- (A) Only an ordinary FM radio is necessary to receive these warnings
- (B) They cover a broad spectrum of the radio band allowing reception on almost any type of receiver
- (C) Ease of operation, knowledge of Morse code is not required
- (D) Information on a given topic is only broadcast at specified times

*If choice C is selected set score to 1.*
50. The National Geospatial-Intelligence Agency (formerly the National Imagery and Mapping Agency) would produce a chart of the coast of which area?

- (A) Alaska
- (B) Hawaii
- (C) Puerto Rico
- (D) Canada

*If choice D is selected set score to 1.*