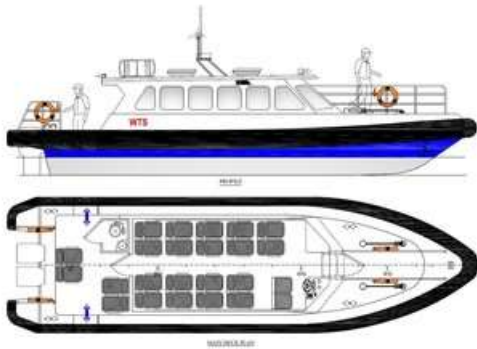


Sample Questions for 1st Class Master

Parts of a Boat:

1. Identify and show the following parts of a boat in the given diagram/picture.

Port, Starboard, Bow, Stern, Mast, Railings, Rudder, Propeller, Bridge, Masthead light, Deck, Hull, Gunwale, Forward, Aft, Length, Breadth, Freeboard, Life buoy, Life raft, Foc'sle, Poop, and passenger cabin.



Seamanship:

1. Write any two types of ropes used on ships.
2. Name any two types of natural fiber ropes used on ships.
3. Name any two types of synthetic fiber ropes used on ships.
4. Name any two types of steel wire ropes used on ships.
5. Write any two uses of ropes on ships.
6. What are the two directions in which the strands of ropes are twisted?
7. Write any four reasons for widely use of synthetic ropes on ships.
8. Write any four care of synthetic ropes which you will take for safe use.
9. Write in not more than four lines you will open a new coil of rope.
10. Write two factors according to which the strength of ropes vary.
11. Write any four information you will find in a rope certificate.
12. What is SWL of a wire rope? How will you estimate the same from its Breaking Stress? If its breaking stress is 6 tonnes, what will be the SWL?
13. Write any four care of wire ropes for safe handling.
14. Write in not more than four lines, the way you will renew a crane wire.
15. Write any four checks you will carry out on wire ropes for recognizing its damage.
16. Write any two characteristics that determine the wire rope requires discarding.
17. Write any two purposes for whipping of rope ends.

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18. Write in not more than four lines you will carry out common whipping.
19. Name any four knots used by seafarers on ships.
20. Write two uses of "Overhand" knot.
21. Write two uses of "Figure of Eight" knot.
22. Write two uses of "Bowline" hitch.
23. Write two advantages in using "Bowline" hitch.
24. List any four common Bends in use on ships.
25. List any four common Hitches in use on ships.
26. Write two uses of "Clove hitch".
27. Why is it necessary to put a Monkey's Fist on a heaving line?
28. Write two uses for Splicing of Ropes.
29. Name any two types of Splice of Ropes.
30. Sketch a D Shackle and name its parts.
31. Write the meaning of SWL (3) T, stamped on a shackle in not more than four lines.
32. List four types of thimbles used on ships.
33. Write two purposes for mousing a hook or shackle.
34. Write two uses of Bulldog grips on wires.
35. Write two purposes for use of the appliance "Hand Lead".
36. Write in not more than four lines, the way you will determine the bottom of sea-bed.
37. Write in not more than four lines, the "Benefit of the Hand Lead".
38. Write in not more than four lines, the reason for using a left handed rope in Hand Lead Line.
39. Write in not more than four lines, how the forward of a vessel is secured to a wharf.
40. Write in not more than four lines, how the stern of a vessel is secured to a wharf.
41. Name any four forces an I.V vessel is subject to while secured to an open berth.
42. Write any two purposes for using headlines /stern lines while she is secured to a wharf.
43. Write in not more than four lines, the reasons for using combination of ropes in mooring.
44. Write in not more than four lines, the maintenance to be done on a mooring winch.
45. Write the two purposes for using blocks on ships.
46. Name any four types of blocks used on ships.
47. Write any four cares you will take during overhauling of blocks.
48. Write any two markings that you will find on the shell of a wooden block.
49. What is a tackle and why is it required on ships?
50. Write in not more than four lines, overhauling of a gin block.

ROR:

1. Define power-driven vessel, vessel not under command, vessel restricted in her ability to manoeuvre, underway and restricted visibility.

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2. Explain responsibilities of a look-out man in not more than four lines.
3. Explain Rule 5 (Look out) in not more than four lines.
4. Write the two reasons for proceeding at a Safe Speed by all vessels.
5. Write any four factors to be taken into account for determining Safe Speed by all vessels.
6. Write in not more than four lines, how will you determine if risk of collision exists?
7. Write in not more than four lines, necessary action to be taken by you to avoid collision at sea.
8. Write in not more than four lines, your responsibility during navigating in a narrow channel.
9. When shall a vessel be called an overtaking vessel?
10. Explain Rule 13 (overtaking) in not more than four lines.
11. Explain Rule 14 (head on situation) in not more than four lines.
12. Explain Rule 15 (crossing situation) in not more than four lines.
13. Explain Rule 16 (action by give-way vessel) in not more than four lines.
14. Name the four types of vessels a power-driven vessel underway shall keep clear.
15. Write any four precautions which you will observe during navigating in restricted visibility.
16. Write two occasions when you will switch on navigation lights on ships.
17. Define Masthead light, Side lights, Stern light and towing light.
18. What lights shall a power driven vessel of 60 meter in length underway show?
19. What lights shall a towing vessel show when the length of the tow is 180 meter?
20. What lights shall a vessel not under command show when is making way through the water?
21. What lights shall a vessel engaged in pilotage duty show?
22. What lights shall a vessel at anchor and engaged in pilotage duty show?
23. What lights shall a vessel at anchor show?
24. What lights shall an aground vessel show?
25. Draw a vessel at anchor and show on it the day signal for vessel of length 60 meters.
26. Draw an aground vessel and show on it the day signal for length of vessel 40 meters.
27. Write the meaning of the maneuvering sound signals – 1 short blast, 2 short blasts and 3 short blasts.
28. Write the meaning of the maneuvering sound signals – 1 short blast, 2 short blasts and 3 short blasts.
29. What sound signals shall a vessel overtaking another in narrow channel sound?
30. How shall a vessel about to be overtaken indicate her agreement to an overtaking vessel?
31. How shall a vessel in doubt indicate such doubt to another vessel in sight?
32. How shall a vessel approaching a bend answer to the sound signal heard from another vessel?
33. What sound signal shall a power driven sound underway but stopped in fog?

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34. What sound signal a vessel of 40 meters in length shall make in fog when not in command?
35. What sound signal a dredging vessel shall make when underway but stopped in fog?
36. What sound signal a towing vessel shall sound when underway but stopped in fog?
37. What sound signal a vessel in length 60 meters at anchor shall sound in fog?
38. What is the additional sound signal for a vessel in length 40 meters at anchor in fog?
39. What is identity sound signal for a pilot vessel in fog?
40. What light signal shall a vessel make for attracting the attention of another vessel in sight?

Maintenance:

1. How does rust form on the steel decks of a barge?
2. What is "Corrosion" and how it can be prevented?
3. Why is it necessary to paint the surface of steel decks of a ship?
4. Why are "Primers" used as a first coat?
5. Why is it necessary to give at least two finish coats of paints?
6. Write any four types of brushes used on ships.
7. How will you distinguish a good brush from a bad brush?
8. Write the four ingredients of paints used on ships.
9. What is the purpose of "Binder" in paint?
10. What is the function of "Solvent"?
11. What causes "Blistering" in paint surfaces?
12. How will you prevent "Skinning" in paint?
13. What causes "Yellowing" of white paint?
14. Why is it recommended to mix a little blue with white paint?
15. Write any four precautions that you will observe during painting.
16. What causes "Peeling" of paint?
17. Write two causes for dulling of paint.
18. Write in not more than four lines the preparation you will make for painting steel decks.
19. What is the main difference between Anti-fouling and Anti-corrosive paints?
20. Name any four top coat paints used on ships.
21. Write any two types of paints?
22. Write any four maintenance works done on a boat in dry-dock.
23. Write in not more than four lines the maintenance done on windlass in dry-dock.
24. Write in not more than four lines the maintenance done on anchor chains in dry-dock.
25. Write any four maintenance works done on the hull of a ship in dry-dock.

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Navigation and Bridge Equipment:

1. What is course of the vessel?
2. How does the course of a vessel help a navigator?
3. What are leading lights found in a port?
4. Write any two advantages of the leading lights found in a port.
5. How does a Magnetic Compass vary from Gyro Compass?
6. How many scales are there on a navigational chart?
7. Name the scales on a navigational chart.
8. Which scale is used for measuring distance on a navigational chart?
9. Write in not more than four lines how you will measure distance in a nautical chart.
10. What is True and Magnetic meridians?
11. What is Variation error of a Magnetic Compass? Where will you find this error?
12. The variation error of a place was $3^{\circ} 18'$ in the year 2009 and increasing by $00^{\circ} 03'$ every year. What will the variation error applicable for that place in 2021?
13. What is deviation error of a Magnetic Compass? How is it created on a barge?
14. Where does a navigator find Deviation error on ships?
15. What is compass error?
16. If variation is $6^{\circ} W$ and Deviation for the ship's head is $4^{\circ} W$, then what will be the compass error?
17. If variation is $8^{\circ} E$ and Deviation for the ship's head is $3^{\circ} W$, then what will be the compass error?
18. If variation is $7^{\circ} W$ and Deviation for the ship's head is $9^{\circ} E$, then what will be the compass error?
19. Given compass course $042^{\circ} (C)$ and Error $8^{\circ} W$, find the true course.
20. Given compass course $142^{\circ} (C)$ and Error $6^{\circ} E$, find the true course.
21. Given true course $142^{\circ} (T)$ and Error $6^{\circ} W$, find the course to steer.
22. Given true course $236^{\circ} (T)$ and Error $9^{\circ} E$, find the course to steer.
23. Find the compass course to steer, if the true course is $045^{\circ} (T)$, Variation $6^{\circ} W$ and Deviation $3^{\circ} E$.
24. Given Gyro heading $224^{\circ} (G)$ and error $2^{\circ} (L)$, find the True course.
25. Given True course $340^{\circ} (T)$ and error $2^{\circ} (H)$, find the Gyro course to steer.
26. How will you ascertain course of a vessel between two given positions?
27. Write any two methods you will use for finding position of a vessel.
28. Name any two navigational aid in a port used for safe navigation.
29. What is DR position of a ship?
30. What is an estimated position of a ship?
31. What is observed position (fix) in navigational term?
32. What is set and drift of the current?
33. Given course $080^{\circ} (T)$, Speed 8 knots and current 135° and drift $1'$ in an hour. Draw and show course and speed made good.

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34. What is leeway?
35. Given course steered by a barge 100 (T), wind SSW and leeway 3° , find the course made good by the barge.
36. What is Chart Datum?
37. Explain in not more than four lines the height of tide with an example.
38. Given soundings at a place read from the chart 12 m, if height of tide 1.2 m, what will be the actual depth of water?
39. What is range of tide?
40. What is duration of tide?
41. Given height of L.W 0.6 m at 0350 hours and H.W 3.2 m at 0620 hours, what are the range and duration of the tide?
42. Write in not more than four lines how small corrections on chart are made.
43. Name any two equipment on bridge used for position fixing.
44. Write any two functions of RADAR on bridge.
45. Write any two functions of AIS on bridge.
46. Name two bridge equipment used for taking bearing of an object.
47. Write any four useful information that you will find from a GPS?
48. Write two precautions that you will observe using GPS for position fixing.
49. Write two precautions that you will observe using Echo Sounder.
50. Write in not more than four lines how you will keep navigational watch.
51. Draw the symbols of the following for effecting small corrections on chart.
 - a. Sounding of doubtful depth
 - b. No bottom found at 12 m
 - c. Wreck showing hull
 - d. Wreck showing mast
 - e. Fishing prohibited
 - f. Spoil ground.

Meteorology:

1. What is visibility?
2. Name any four cases when the visibility can be reduced at sea.
3. Name the four seasons prevalent on the coast of Maharashtra in a year.
4. Explain Mist, Fog and Haze.
5. What are the four favorable conditions for formation of land fog in winter?
6. Write two favorable conditions for formation of hill fog on the mountain ranges of Konkan.
7. What is Elephantas?
8. How does land and sea breeze form?
9. Draw and show the direction of wind on Maharashtra Coast during SW'y monsoon.
10. Draw and show the direction of wind on Maharashtra Coast during NE'y monsoon.

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11. Draw and show the direction of current on Maharashtra coast in the month of August.
12. Draw and show the direction of current on Maharashtra coast in the month of January.
13. Write any four warning signs of an approaching cyclone.
14. What are the worst months for cyclones in Arabian Sea?
15. Write any four precautions you will observe for a cyclone approaching your vessel in port.
16. Write any four precautions you will observe for a cyclone approaching your vessel in a river passage.
17. What is swell?
18. What is sea (waves)?
19. How does sea (waves) differ from swell?
20. What is gust?
21. What is squall?
22. How does gust differ from squall?
23. What is veering of winds?
24. What is backing of winds?
25. Write any four dangers associated with cyclone being encountered during a river passage.
26. Write any two precautions you will observe when using an aneroid barometer.
27. Name the two errors of an aneroid barometer.
28. Write two favorable conditions for formation of thunder storms.
29. Write any two signs of withdrawal of SW'ly monsoons across Maharashtra Coast.
30. Write any two uses of NAVTEX?
31. Name any two instruments used for weather forecasting on vessels.

Cargo Work:

1. Name two stresses a barge is subjected to at sea while carrying iron ore.
2. Why is it required to spread out ore cargoes across the entire length of a single hold barge?
3. Define with example – Displacement, Deadweight, Lightship, Draft, Trim, List and Even Keel.
4. Write any four precautions you will observe while loading ore cargoes.
5. Write any four precautions you will observe for putting a loaded barge to sea.
6. Write any four precautions you will observe while cleaning holds in passage.
7. Write any four disadvantages of loading a vessel trimmed forward.
8. Why is it required for a barge to take in ballast when sailing with empty holds?
9. Explain Angle of Repose with an example.
10. Write two major dangers associated with low angle of repose cargoes.

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11. Explain Load density of the deck of a vessel.
12. Write in four lines why it is required to consider the load density before loading cargo on deck.
13. What is SWL? Where will you find the SWL a hoisting rope?
14. What is Breaking Stress? How does it differ from SWL?
15. Write any four information you will find in the test certificate of a wire.
16. What are the four major hazards associated with coal cargoes?
17. Write four precautions you will observe while carrying coal cargoes.
18. What is Boat Note? Write four information required to be provided in the said note.
19. Write the cargoes handled by non-major ports under MMB.

Safety:

1. Define Enclosed Space. Name any four enclosed spaces you will find in a vessel.
2. Write any four precautions you will observe before entering into an enclosed space.
3. Write any four precautions you will observe working on mast at sea.
4. Write any four precautions you will observe working over side.
5. Write any four precautions you will observe carrying out hot work on deck?
6. Write any four actions you will take following collision of own vessel with other.
7. Write any four actions you will take following grounding of own vessel.
8. Write any four precautions you will take before bunkering of the vessel.

Handling of Passengers:

1. Write any four checks you will carry out on passengers before boarding them.
2. Write in four lines how you will handle a difficult passenger.
3. Name four items that passengers are prohibited to carry in their baggage.
4. Where will you find the capacity of passengers to be carried in a boat?
5. Name any four safety equipment you will familiarize the passengers upon their boarding.

Vessel Maneuvering:

1. What are the six degrees of motion of a vessel at sea?
2. What is considered shallow water for maneuvering?
3. Write in four lines how shallow water will effect maneuvering of a ship.
4. What is squat effect? How will you minimize it?
5. What is turning circle? Explain the terms with diagram – Advance, Transfer, turning radius and turning diameter in the turning circle.
6. Name four internal forces that can be used while maneuvering.

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7. Name two external forces that can be used while maneuvering.

I.V Rules, Administration and Communication:

1. Explain in-shore operational limits for I.V vessels during fair weather.
2. What is the period of fair weather in the Arabian Sea?
3. What is the period of fair weather in the Bay of Bengal?
4. Explain in-shore operational limits for I.V vessels during fair weather.
5. Write three requirements for I.V vessels to operate within I.V limits.
6. What is the period of fair weather in the Arabian Sea?
7. What is the period of fair weather in the Bay of Bengal?
8. Name any four ship's certificates which are to be kept valid for operating.
9. What is validity period of Certificate of Survey?
10. Write any four information you will find in the Certificate of Survey.
11. Write in four lines how you will prepare your vessel for renewal of Certificate of Survey.
12. Write any two occasions a certificate of survey shall not be in force.
13. What is Temporary Permit? What is its validity?
14. As per the I.V act, what is the responsibility of master to do with duplicate certificate of survey?
15. As per the I.V act, what is the penalty for master failing to give notice of casualty?
16. As per the I.V act, what is the punishment for offences relating to accident?
17. Expand ISPS? What are the ISPS levels?
18. Write any four entries that you will be making in your log book.
19. Write the VHF signals for Distress, Urgency and Safety.

Cargo, Fuel and ETA calculations:

1. A boat leaves a port at 1242 hours on 30th October. She travels at 6 knots for first 3 hours and at 4 knots the remaining hours. If the distance to its destination is 34 NM, what time shall the boat arrive?
2. A barge is capable of bunkering at the rate of 3 KL per hour. She bunkers at the rate of 2 KL per hour for first 4 hours and increases to its maximum rate. She completes bunkering in 9 hours. Find the total quantity of bunkers taken in by the barge?
3. A barge is making 6 knots and leaves Ratnagiri at 2014 LT of 17th August. The barge has to travel to Mumbai at a distance of 180 NM. What is its ETA Mumbai?
4. A barge has ROB fuel 18 mt and consumes 4 mt of fuel per hour on single engine. If the barge runs both of its engine, covers a distance in 12 hours and arrives with 6 mts of fuel, find the fuel taken in by the barge before sailing.

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5. A barge loads to 3.5 meter draft and the displacement at 3.5 m is 1440 mts. If the barge has 48 mts of fuel, 12 mts of FW, 24 mts of ballast and its lightship 120 mts, find the quantity of cargo on board the barge.
6. A barge arrives a port with 860 mts of cargo. If the deadweight of the barge is 1060 mts, and its corresponding displacement 1280 mts, find its light ship.
7. In a river passage, the tide is running at the rate of 2 knots in the same direction of a barge making way. The engine speed of the barge is 4 knots. If the barge arrives the river mouth at 2254 LT on 30th June and has to cover a distance of 36 miles to a port, what will be its ETA?

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SAMPLE