

OPERATIONAL LEVEL – ENGINE



REPUBLIC OF THE PHILIPPINES
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GUIDE QUESTIONNAIRES

for seafarers

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These sample questions have been reviewed and validated by our respective Board of Examiners which may serve as a guide for the review of aspiring Marine Deck and Engineering Officers, towards the successful completion of the Theoretical Examination.

The following sample questions do not reflect the actual set of database of questions given during the theoretical examination. Examinees are encouraged to study the contained sample questions and probable answers as they are intended to give an indication of the format and difficulty level of the theoretical examination.

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Thank you.

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FUNCTION 4 – Competence 11

1. On a tanker vessel, what is the required combined capacity of the inert gas generating system as compared to the total capacity of all the cargo pumps which can be operated simultaneously?
2. An open space to protect two bulkheads in case of fire or collision is called _____.
3. Each inert gas system must be designed to supply the cargo tank with a gas, or mixture of gases, that has an oxygen content by volume of _____.
4. The holding power of anchors under ordinary conditions in good holding grounds its “hook” will withstand the pull of _____.
5. Each vessel designed to carry more than 49 passengers must have _____.
6. What is the shipbuilding term for “toward the stern”?
7. The difference between the initial trim of a vessel and the trim after anew load condition is known as _____.
8. Having a high "reserve buoyancy" after loading if the ship will be accidentally holed during navigation, the importance of it is what?
9. Which of the following is NOT included in the water tight doors to be met during construction as provided in the "International Load Line Convention"?
10. The ratio of volume of displacement to a block having the same length, breadth and draft of the vessel is known as _____.
11. What is not usually a concern when loading a single-hulled tanker?
12. What is the volume of the ship's hull between the water line and the freeboard deck?
13. What shipbuilding terminology gives the atwarship members of the ship's frame?

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14. The weight of the cargo loaded to a ship that tends to sink it deeper exactly 10 millimeters is called what?
15. Static water pressure of a hull of a ship is greatest at the _____.
16. The value of KM at any draft may be taken from the_____.
17. The bottom of a ship in the midship region, is usually flat, but not necessarily horizontal. If the line of the bottom is extended out to intersect the moulded breath line, the height of this intersection above the keel is called_____.
18. What term indicates the vertical distance between the bottom at the centerline and the bottom at any given point?
19. A vessel's stability normally increases when tanks are ballasted because the vessel's_____.
20. When securing the operation of an inert gas system the final step should be _____.
21. When the inert gas system is temporarily unable to maintain a positive pressure or an oxygen content less than 8% cargo operations should _____.
22. An inert gas system incorporating a separately fired inert gas generator shall be provided with visual and audible alarms to indicate failure of the power supply to the generator, the automatic control system and _____.
23. What is a danger of a half full tank onboard tanker vessel?
24. What is the volume of all enclosure of the cargo holds measured after the construction of the ship?
25. What term indicates the rise of the deck in going from the side to the center of the vessel?
26. What part of the ship's structural framework runs from fore to aft?
27. How does an inert gas system on a tanker function to prevent explosion in cargo tanks?
28. What is a line drawn at the top of the flat plate keel of a vessel?

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29. The purpose of the inclining experiment is to _____.
30. The pollution prevention regulation state that liquid waste collected in drip pans, buckets, or tanks should be disposed by _____.
31. The elevated perforated bottom of a chain locker which prevents the chain from touching the bottom of the chain locker and allows water to flow to the drain is a _____.
32. Which denotes the total force that the vessel or part of the vessel should withstand when floating under a given condition?
33. An inert gas system is designed to reduce the possibility of tank explosion by _____.
34. A vessel would be referred to as "tender" when the weight of the cargo is _____.
35. Which of the following methods is used to supply inert gas from a flue gas system to the cargo tanks?
36. The component in an inert gas system use for cleaning the gas of solid and sulfur combustion products, while simultaneously cooling the inert gas, is called the _____.
37. Control of flooding should be addressed _____.
38. The inward curvature of the ship's side is the _____.
39. What will happen when a vessel loses its reserve buoyancy?
40. The most detrimental effect on initial stability is a result of liquids _____.
41. The purpose of the deck seal in an inner gas system is to prevent _____.
42. Metacentric height is an indication of a vessel's stability _____.
43. What is known as the compartment that is forward of the stern generally below the load water line?

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44. The percentage of the total surface area or volume of a flooded compartment that can be occupied by water by damage is called_____.
45. The section aft of amidships is called after _____
46. The reserve buoyancy of a vessel varies directly with changed in the vessel's _____.
47. The volume of all watertight enclosed spaces above water line is called_____.
48. What is the weight of the cargo that tends to sink the vessel exactly 10 millimeters during loading?
49. What is termed as the total weight of the ship's hull, machineries, spare parts, boiler water, fresh and ballast including the full weight that can be loaded?
50. The strake next to the keel is_____.
51. A ship designed to carry either oil or solid cargoes in bulk is known as_____.
52. A connection between bilge and ballast line must be made by installing a _____.
53. When cargo is shifted from the lower hold to the main deck the_____.
54. What represents the center of gravity?
55. The point that is halfway between the forward and after perpendicular and is a reference point for vessel construction is the_____.
56. A vessel which is subjected to hogging _____.
57. Your vessel rolls slowly and sluggishly. This indicates that the vessel _____.
58. Which statement is TRUE of a stiff vessel?

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59. How are the hulls of most modern towing vessels constructed today being fabricated?
60. Excessive recirculation of inert gas is _____.
61. Aboard tankers, the term Category “A” machinery Space, as defined by regulations means any space including trunks and ducts to that space containing _____.
I. Internal combustion machinery used for main propulsion
II. One or more oil fired boilers or oil fuel units
III. Internal combustion machinery used for purposes other than propulsion where the total collective power is at least 500 brake horsepower
62. Corrosion resistant material and non- corrodible material will include which of the following _____.
I. Plastics
II. Silver
III. Copper nickel
63. Which of the following methods of finished applications is/are considered to be satisfactory for resisting corrosion?
I. Electroplating with cadmium
II. Sherardizing
III. Galvanizing
64. Corrosion resistant material and non- corrodible material will include which of the following _____.
I. Brass
II. Copper nickel
III. Plastics
65. The blowers of an inert gas generation system aboard a tanker, will be automatically secured if _____.
I. Normal water supply at the water seal is lost
II. The temperature of the inert gas being delivered to the cargo tanks is more than 150oF
III. The cooling water supply to the scrubbers is lost
66. The function of the scrubber in an inert gas system is to _____. I. Cool the gases II. Remove solids from the gases III. Remove sulfur compounds from the gases

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67. What stress is NOT categorized as local stress?
- I. Pounding
 - II. Panting
 - III. Unequal distribution of weight
68. The part that is known as the appendages of the ship includes _____.
- I. bilge keel
 - II. rolling keel
 - III. rudder
69. If the inert gas system was not in operation while loading crude oil on a tank vessel, what action would you take?
70. Where are self-closing doors required on a vessel?
71. What is the ability of the vessel to return to its upright position after it was heeled to either side?
72. What is the condition of the vessel that is loaded inside a river with water density of 1.000 when it goes out to the open sea with a higher water density?
73. Addition of weight to a vessel will ALWAYS _____.
74. Flooding of any ship's compartment, resulting in a serious loss of reserve buoyancy, will always _____.
75. As the displacement of a vessel increases, the detrimental effect of free surface _____.
76. Which statement is TRUE of a tender vessel?
77. Which statement about the free surface effect is TRUE?
78. In regards to the center of buoyancy, which of the following statement is correct?
79. Your vessel is damaged and partially flooded. It is listing 12 deg to port and trimmed 2.5 meters down by the head. It has a long, slow, sluggish roll. What action will you take first?

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80. Stability is determined principally by the location of two points in a vessel: The center of buoyancy and the _____.
81. The quality of initial stability is indicated by _____.
82. Free communication effect is in direct proportion to _____.
83. What is the total volume of all the enclosures inside the cargo holds measured after the construction of a ship?
84. The difference between the forward and the aft drafts of a vessel would be the _____.
85. Which abbreviation refers to the horizontal distance between perpendiculars taken at the forward-most and the after-most points on a small passenger vessel's waterline at her deepest operating draft?
86. What refers to the amount of load which a particular part of the ship structure is subjected? It is usually expressed in kg./sq.cm.?
87. Which of the following will increase the height of the center of buoyancy of your vessel?
88. Which of the following statements describes the correct procedure for closing a watertight door?
89. Yawing is the angular motion of the vessel about what axis?
90. In ship construction, which strength members act to support the decks?
91. The value of the maximum righting arm is dependent upon the position of the center of buoyancy and the _____.
92. With no environmental forces present, the center of gravity of an inclined vessel is vertically aligned with the _____.
93. The ship's part that is made up of the "ribs" of the body whose chief function is to give atwarship strength is called _____.
94. The part of deck machinery that is known as the bitter end, is the _____.

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95. A tank which carries liquid is dangerous to the stability of a vessel when it is _____.
96. The purpose of bilge keels is to _____.
97. Which of the listed functions is the purpose of a gas scrubber in an inert gas generation system?
98. In order to minimize the effects of a tender vessel, when carrying a cargo of lumber, you should _____.
99. Which of the following should a mechanical brake- fitted anchor winch be capable of holding?
100. The point to which your vessel's center of gravity (G) may rise and still permit the vessel to have positive stability is called the _____.
101. The purpose of swash bulkheads is to _____.
102. When a vessel is inclined, the tendency for it to return to its original position is caused by the _____.
103. A continual change in the list, or trim of any floating MODU indicates _____.
104. What is the displacement of a vessel if it is floating on sea water exactly on her summer draft?
105. What do you call the weights of the hull, machinery, spare parts and boiler water of a vessel measured in the floating dock after its construction?
106. What is the principle or theory that proves that the weight of a floating object is equal to the weight of the displaced water?
107. The collision bulkhead is located _____.
108. Penetrations and openings in watertight bulkheads in a vessel of less than 100 gross tons must _____.
109. The bilge system has been performing well. However, the aft starboard engine room bilge-well suddenly fails to be pumped out. Which of the following should be done first to determine the cause?

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110. Molded depth is measured from the underside of the deck plating at the ship's side to the top of the_____.
111. Which of the following conditions will result in an automatic shut down of the flue gas inert gas system?
112. Vertical support members used to strengthen bulkheads are called _____.
113. The kind of local stress that is due to the hammering effect of the fore end of the ship head on to the sea in light condition is the _____.
114. The result of a blow delivered by a heavy sea causing rapid vibrations of the elastic portions of the ship's hull is identified as _____.
115. The double bottom in a vessel is a space comprised of _____.
116. Your vessel has been damaged and is partially flooded. The first step to be taken in attempting to save the vessel is to _____.
117. The local stress that is cause by the head resistance due to the work of the bow "in and out" in a seaway is called _____.
118. What is known as the water pressure exerted in the direction normal to the immersed part of the ship?
119. An inert gas system on a tanker should be used to _____.
120. The primary function of a "flue gas type" inert gas system is to _____.
121. Which of the following describes the purpose of a striker or doubler plate?
122. Free surface effect occurring in partially filled cargo or fuel storage tanks on board a vessel should be avoided to _____.
123. When flooding occurs in a damaged vessel, reserve buoyancy _____.
124. What is the ratio between the underwater volume of a ship and that of a "box shape" barge having the same breadth and length?

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125. Which of the following is NOT included in the requirements to be met in a general cargo ship after loading in order to maintain proper stability during navigation?
126. You are fighting a fire in a cargo hold on your vessel. Which action is most important concerning the stability of the vessel?
127. What is direction of the force called buoyancy under the vessel which is equal to the weight of the displaced water?
128. Metacentric height is a measure of _____.
129. When the height of the metacenter is the same as the height of the center of gravity, the upright equilibrium position is _____.
130. What standard mathematical formula is commonly used to calculate a vessels water-plane area for stability purposes?
131. Which of the following deals with the construction of ships?
132. The point beyond which an added stress will produce deformation of material is known as _____.
133. Which of the following is known as the amount of load to which a particular part of the ships structure is subjected? It is usually expressed in kg./sq.cm.?
134. The bilge keel is for the purpose of_____.
135. What is known as the total force that the vessel or any part of the vessel should withstand under a given condition?
136. What is known as the stress due to the unequal distribution of weight?
137. In a longitudinally framed vessel, the longitudinal frames are held in place and supported by athwartship members called_____.
138. Angular motion about the vertical axis of a vessel is known as _____.
139. A vessel's stability is greatly reduced by liquid free surface. Which of the listed conditions would develop the greatest adverse effect?

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140. GM is a measure of_____.
141. What must be accurately determined to assess the potential for progressive flooding after a vessel has been damaged?
142. Where should you pay particular attention to be able to maintain adequate stability in loading deck cargo?
143. Freeboard is a measure of_____.
144. Which factor has the greatest effect on the value of the free surface correction?
145. What will happen when cargo is shifted from the main deck into the lower hold of a vessel?
146. The tendency of a ship to resist a change in trim is call_____.
147. When making a turn (course change) on most merchant ships, the vessel will heel outwards if _____.
148. The reserve buoyancy of a ship consists of _____.
149. An intact buoyancy means_____.
150. GM' cannot be used as an indicator of stability at all angles of inclination because_____ .
151. Propeller pitch speed minus ship speed divided by the propeller pitch speed is termed _____.
152. A stress called compression is being placed on the sheer strakes if the vessel is _____?
153. The trim of a vessel is the_____.
154. Which does NOT affect the value of the free surface correction?
155. A negative metacentric height _____.
156. Archimedes' principle states that the resultant pressure acting on a body immersed in a fluid _____.

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157. Freeboard is the difference between the depth at side and the _____.

158. A vessel trimmed down by the bow has _____.