Sometimes it is desirable to connect a member both by riveting and welding. Which statement is TRUE concerning this procedure? The welding must be completed before the riveting commences.

A welded joint's effectiveness is considered 100%. Shell plating is the outer plating of a vessel. In ship construction, keel scantlings should be the greatest Amidships.

The main function of the core of a wire rope is to Support the strands laid around it. Which arrangement of shell plating is used most in modern shipbuilding? Flush.

While in dry dock your vessel will be belt-gauged. This process involves drilling or sonic-testing the hull to determine the plate thickness. What is NOT an advantage of ship construction methods using welded butt joints in the shell plating? Reduces plate stress.

Shell plating that has curvature in two directions and must be heated and hammered to shape over specially prepared forms is called furnaced plate. A thirty pound plate would be 3/4" thick.

The joint formed when two steel shell plates are placed longitudinally side to side is called Seam. Owing to the greater girth of a ship amidships than at the ends, certain strakes are dropped as they approach the bow and stern to reduce the amount of plating at the ends. These strakes are called Drop strakes.

The fore and aft run of deck plating which strengthens the connection between the beams and the frames and keeps the beams square to the shell is called the Stringer strake.

Which statement about a vessel's stability while dry-docking is TRUE? Every ton of weight bearing on the blocks acts as if a ton of weight was removed at keel level.

The garboard strake is the row of plating nearest the keel. To reduce the number of strakes at the bow, two strakes are tapered and joined at their ends by a single plate. This plate is known as a Stealer plate.

The strake on each side of the keel is called a Garboard strake. The term "strake" is used in reference to Hull platings. Molded depth is measured from the inside of the shell.
Progressive flooding is controlled by securing watertight boundaries and ******. **pumping out** flooded compartments

What is NOT an item that requires the vessel to be dry-docked? **Verification of load line measurements.**

Wale shores would be used when dry docking a vessel with ******. **excessive deadrise**

Which statement concerning dual-tonnage vessels is TRUE? **A single-deck vessel may not be assigned dual tonnages.**

Your vessel was damaged and initially assumed a significant list and trim; however, further increase has been slow. Based on this data, what should you expect? **The vessel can probably be saved if further flooding can be stopped.**

After an explosion, repair of emergency machinery and services should be accomplished ******. **after control of fire, flooding, and structural repairs**

Progressive flooding may be indicated by ******. **a continual worsening of list or trim**

The interval time between the stern post landing on the blocks and the ship taking the blocks overall is referred to as the ******? **Critical period**

During the critical period of drydocking, part of the weight of the ship is borne by the blocks and creates an upthrust at the stern and increases as the water level falls. This upthrust will cause a(an) ******? **Virtual loss of metacentric height**

A vessel being drydocked has a displacement of 15,000 tons, TPC 5 tons, KM 3.5meters, GM .05meters, and has taken the blocks fore and aft at 3 meters draft. Find the GM when the water level has fallen 0.6 meter. **0.2 – 0.25 meters**

Bulkhead spacing throughout the cargo tank is determined by ******? **The length of the cargo tanks**

The deterioration of steel due to the chemical and electro-chemical reaction to its environment is called ******? **Corrosion**

The contamination in the environment such as soluble salts that are present in moisture and oxygen in air are called ******? **Electrolytes**

The underwater hull of a vessel is submerged in water and needs corrosion protection, the most common and effective corrosion protection for this area is ******? **Cathodic protection**

Ballast tanks are subjected to sea water and therefore needs special corrosion protection, the most commonly used are ******? **Cathodic and coating protection**

Paint protection are effective in retarding the corrosion process by limiting the access to the substrate of the ******? **Electrolyte**

Sacrificial anodes are good corrosion protection because zinc, aluminum or magnesium are ****** the electrochemical table than steel. Higher up**

The most effective method of corrosion removal is the ******? **Abrasive blasting.**
When using conventional paints, shot blasting standard for outside hull and upper deck must conforme with ______? SIS-St 3.

Coating defects of paint which have bubbles that may contain liquid and are created by localized loss of adhesion are called ______? Blisters.

The usual method of determining the wet film thickness of applied paints is thru the _____? Comb gauge.

The BEST information on the nature and extent of damage to the vessel is obtained from __________. personnel at the scene of the damage.

A "liner" in riveted construction of a vessel is a(n) _______. small plate which fills the aperture between riveted strakes and the vessel framing.

The use of liners in riveted construction is eliminated by using _______. Joggled construction.

Which type of weld testing can be used to detect internal flaws? Ultrasonic.

The type of joint formed when an edge of one plate is laid over the edge of the plate to which it is riveted is a _______. Lap joint.

Which weld fault can only be detected by a method that examines the internal structure of a weld? Lack of penetration.

A vessel is constructed with a steel hull and an aluminum superstructure. Which statement is TRUE? The aluminum structure is usually attached to a steel coaming by a method that insulates the two metals.

What is the purpose of cant frames in steel vessels? To provide strength to shell plating at the stern.

Ultrasonic testing is used to determine the thickness of a vessel's shell plating and to _______. test welds for subsurface defects.

What welding pattern is NOT used to permanently attach a stiffener to a plate? Tack.

The welds used to attach stiffeners to a plate are known as _______. fillet welds.

The type of joint formed when a third small plate is riveted over two plates butted together is called a _______. Strap joint.

The welds used to join shell plates in flush construction are known as _______. Butt welds.

Rivets are usually made of _______. Mild steel.

Which is NOT an advantage of the flush method of welded shell plating? Reduces plate stress.

The joint formed when two steel plates are placed end-to-end is called a _______. Butt.

The "grip" of a joint represents the _________ thickness of the connected members.
The horizontal flat surfaces where the upper stock joins the rudder are the _________. **rudder palms**

When riveted joints occur at the ends of plating they are called ________. **Butts**

A wooden plug fitted tightly in the vent of a damaged tank may prevent the tank from ________. **filling completely**

Which statement is true concerning repairs on the hull of a vessel which is to be riveted and welded? **Welding must be completed before the riveting begins.**

The smallest size of flaw that can be detected on a radiograph examination of a weld will be indicated by the ________. **Penetrometer**

Which type of weld testing can be used to detect internal flaws? **Radiographic**

The shearing stresses on a ship's structure are usually greatest at _________. **The ship’s quarter length point**

You must shore up a bulkhead due to solid flooding forward. The bulkhead approximates a rectangle. The center of pressure of the shores on the bulkhead should be located _________. **approximately halfway up the bulkhead**

Which statement about bilge keels is CORRECT? **They increase resistance to rolling.**

"Limber" is a term associated with ________. **Drainage**

Periodic surveys to renew the load line assignment must be made at intervals NOT exceeding ________. **five years**

What is the period of validity of a Cargo Ship Safety Equipment Certificate? **60 months**

The fitting at the end of a cargo line in a tank that allows suction to be taken close to the bottom of a tank is a _________. **Suction lines are fitted with a non-return valve**

The Sheer Plan _________. **shows a longitudinal side elevation**

What is the period of validity of the SOLAS required Cargo Ship Safety Construction Certificate? **60 months**

The wooden plug inserted in the vent of a damaged tank should be removed if you are going to _________. **Pump from the damage tank**

What term indicates the immersed body of the vessel forward of the parallel mid-body? **Entrance**

75. Small hull leaks can be temporarily repaired by _________. **Caulking**

The result of two forces acting in opposite directions and along parallel lines, is an example of what type of stress? **Shear**

Tensile stress is a result of two forces acting in _________. **opposite directions on the same line, tending to pull the material apart**
Weight concentration in which area will cause a vessel's bottom to be subjected to tension stresses? **Amidships**

A disk with a horizontal line through its center, equivalent to the summer load line, is called the _______. **Plimsoll mark**

Separating both blocks of a tackle to prepare it for reuse is called _______. **Overhauling**

If two falls are attached to lift a one-ton load, what angle between the falls will result in the stress on each fall being equal to the load being lifted? 120°

The load line regulations are administered by the __________. **Port state**

A sling is rigged on a piece of pipe weighing 1000 lbs. The angle between the sling legs is 140° and the legs are of equal length. What stress is exerted on each sling leg when the pipe is lifted? 1462 lbs.

The term that indicates how many tons of cargo a vessel can carry is ________. **Deadweight**

What organization assigns loadlines to vessels? **Classification societies**

Which factor does NOT affect the required freeboard of a cargo vessel? **Condition of trim in normal operation**

The maximum theoretical stress that can be developed on a guy in a yard and stay rig is limited by the _______. **Lifting capacity of the winch**

The greatest horizontal stress between the heads of the booms in the yard and stay rig occurs when the load is in such a position that the _______. **Falls are at an equal angle to the horizontal**

How much weight can you lift by applying 100 kgs. of force to a twofold purchase rigged to disadvantage (do not consider friction)? 400 kgs.

What is the mechanical advantage of a threefold purchase when rove to disadvantage and neglecting friction? 6

A load line is assigned by __________. **Classification society**

The maximum draft to which a vessel can legally be submerged is indicated by the ________. **Load line mark**

On a crane, the boom indicator tells the operator what angle the boom angle is compared to the __________. **Horizontal position**

The boom stops on a pedestal crane prevent the boom from ________. **Being raised too high**

What is NOT surveyed at an annual load line survey? **The bilge pumping system**

The primary purpose of a load line is to establish required ________. **Minimum freeboard**

What would have the greatest affect on a vessel's longitudinal strength? **Grounding damage to the bilge strake, just aft of midships**
After riveting is completed, the joints on the shell of a vessel are generally made watertight by _________. **Caulking**

When must the Master of a vessel log the position of load line marks in relation to the surface of the water in the Official Logbook? **Prior to getting underway**

Rolling is angular motion of the vessel about what axis? **Longitudinal**

Which term indicates the rise in height of the bottom plating from the plane of the base line? **Deadrise**

What term indicates the line drawn at the top of the flat plate keel? **Baseline**

What term indicates the immersed body of the vessel aft of the parallel mid-body? **Run**

The angular movement of a vessel about a horizontal line drawn from its bow to its stern is _________. **Rolling**

What term indicates a curvature of the decks in a longitudinal direction? **Sheer**

What descriptive term indicates that the dimension is measured from the inner face of the shell or deck plating? **Molded**

The upward slope of a vessel's bottom from the keel to the bilge is called _________. **Rise of bottom**

The vertical motion of a floating vessel is known as _________. **Heave**

Pitching is angular motion of the vessel about what axis? **Transverse**

Which term refers to a transverse curvature of the deck? **Camber**

What term indicates the midships portion of a vessel that has a constant cross section? **Middle body**

What term indicates an inward curvature of the ship's hull above the waterline? **Tumble home**

Angular motion about the vertical axis of a vessel is called _________. **Yaw**

The point that is halfway between the forward and after perpendicular and is a reference point for vessel construction is the _________. **Amid ship**

Heave is motion along the _________. **Vertical axis**

What term indicates the length measured along the summer load line from the intersection of that load line with the foreshore of the stem and the intersection of that load line with the after side of the rudder post? **Length between perpendiculars**

What term indicates the outward curvature of the hull above the waterline? **Flare**

A spreader bar is used to ________. **Protect the upper part of a load**

The horizontal port or starboard movement of a vessel is called _________. **Sway**

Buckler plates are _________. **Metal plates secured over the tops of the hawse pipes**
Horizontal transverse motion of a vessel is known as __________. Sway

With a given load on the cargo hook, tension in a single span topping lifts __________. Increases as the boom’s angle to the horizontal decreases.

When a cargo boom or crane is rated at varying capacities, there will be a table at the controls which relates safe working load to __________. Load radius.

The two factors which make underwater hull repair difficult are accessibility and the __________. Pressure exerted by the water.

The horizontal fore-and-aft movement of a vessel is called __________. Surge.

With a given load on the cargo hook, the thrust on a cargo boom __________. Increases as the angle to the horizontal increases.

Yawing is angular motion of the vessel about what axis? Vertical.

What is the difference between the static and dynamic forces acting on the ship’s hull? Static forces are set up by the cargo and the sea, and dynamic forces are set up by the sea wave action.

Will the internal and external forces acting on a bulk carrier cross section change during loading operation? Yes, the forces from the load and the sea water pressure will increase during the loading.

The strictest load line regulations apply to __________. Passenger ships.

Loadline markings are set by? Classification society.

Keeping the draft at or below the load line mark will insure that the vessel has adequate __________. Reserve buoyancy.

The correction to KG for longitudinal free surface effects for a vessel can be found by dividing the vessel’s displacement with the: The sum of the longitudinal free surface moments of the vessel.

What will happen to the center of gravity of a vessel when weight is added on a vessel? Move in the direction of the added weight.

In the presence of external forces, the center of buoyancy of an inclined vessel is vertically aligned with the ______? Metacenter.

The length of the vessel is 150m long, 20m beam and 12m deep on an even keel at a draft of 8 meters, block coefficient 0.8, the vessel is floating in sea water. Find the cargo to discharge so that the vessel will float at the dame draft mark in fresh water? 480 tons.

The difference between the starboard and port drafts caused by shifting a weight transversely is: List.

Freeing ports on a vessel with solid bulwarks ______? Allow water on deck to flow off rapidly.

A large metacentric height will result in a ______? Short and quick rolling period.
When the height of the metacenter is less than the height of the center of gravity, a vessel has what type of stability negative.

Signs of racking stresses generally appear at the _______. Junction of frames with the beams and floors

A large basin cut into the shore, close off by a caisson, and used for dry-docking of vessel is known as a _______. Graving dock

The maximum length allowed between main, transverse bulkheads on a vessel is referred to as the _______. Permissible length

The term “scantlings” refers to the _____ Measurement of structural member

What is the definition of transverse metacenter? The distance between the actual center of gravity and the maximum center of gravity that will allow a positive stability

At all angles of inclination, the metacenter is _______. Vertically above the center of buoyancy

The most important figure in calculating the free surface content of a tank carrying liquid is -----. Breadth

The effects of free surface on a vessel’s initial stability do NOT depend upon the--------. Amount of liquid in slack tanks

Those vessel’s tanks that are particularly important for trimming the vessel are the------. peaks

Your vessel displaces 497 tons. The existing deck cargo has a center of gravity of 2.5 ft. above the deck and weighs 24 tons. If you load 18 tons of ground tackle with an estimated center of gravity of 18 inches above the deck, what is the height of the CG of the deck cargo? 2.07 feet

Which part of a cargo boom has the greatest diameter? Middle

Galvanizing would not be suitable for protecting wire rope which is used for __________. Cargo runners

A wire rope that has been overstrained will show __________. a decrease in diameter where the strain occurred

A wire rope for a 10-ton boom on a vessel shows signs of excessive wear and must be replaced. What safety factor should be used when ordering a new wire? Five

A charterer is unable to complete the loading of a vessel during the lay days specified in the charter party. Under these circumstances, the _________. vessel operator can collect demurrage

In the manufacture of wire rope, if the wires are shaped to conform to the curvature of the finished rope before they are laid up, the rope is called __________. Preformed

Dead freight is the charge for the __________. difference in the amount of cargo loaded and the amount of cargo booked, through no fault of the vessel

If kinking results while wire rope is being coiled clockwise, you should __________. take a turn under
What is an example of a fundamental objective of cargo stowage? **Prevent over carriage by block stowage.**

When handling cargo, the majority of cargo gear breakdowns is due to __________. **guy failures.**

When talking about wire rope, the lay of the wire is the __________. **Direction wires and strands are twisted together.**

Under the Carriage of Goods by Sea Act of 1936, a vessel will be liable for damage to a cargo when the damage arises out of __________. **Improper stowage.**

A metal eye spliced into a wire is called a __________. **Thimble.**

A common class of wire rope is the 6X37 class. What does the 37 represent? **Number of wires per strand.**

If an electric cargo winch is being used to lift a draft of cargo and the engine room loses all power, which will occur? **An electromagnetic brake will hold the load where it is suspended.**

The type of welding employed in shipyards is primarily __________. **Electric arc.**

A 6x12, two-inch wire rope has __________. **6 strands and a two-inch diameter.**

When snaking cargo into the wing of a hold with the cargo winch, the runner should be lead from the __________. **Heel block to a snatch block.**

Which statement(s) is(are) TRUE concerning wire rope? **Wire rope should be condemned if the outside wires are worn to one-half their original diameter.**

Electric cargo winches have an overload safety device which normally cuts the current to the winch motor __________. **After torque causes line pull to exceed the rated capacity of the winch.**

On your vessel, a wire rope for the cargo gear shows signs of excessive wear and must be replaced. In ordering a new wire for this 10-ton boom, what safety factor should you use? **Five.**

Keel scantlings of any vessel are greatest amidships because __________. **Of maximum longitudinal bending moments.**

Which statement about two lines spliced together is TRUE? **Splicing two lines together is stronger than knotting two lines together.**

What is the main reason to slush a wire rope? **Lubricate the inner wires and prevent wear.**

A tackle is "two blocked" when the blocks are __________. **Jammed together.**

Wire rope is galvanized to __________. **Protect it from corrosion due to contact with saltwater.**

Which is an example of failure to exercise due diligence? **Overloading.**

The size of wire rope is determined by the __________. **Diameter.**
Why is 6X19 class wire rope more commonly used for cargo runners than the more flexible 6X37 wire rope? **It resists abrasion better.**

A long splice in a line ________ is used in running rigging

What would be prima facie evidence of unseaworthiness? **Overloading**

For vessels fitted with cargo gear, an initial test of the units under a proof load shall be conducted. Subsequent tests and exams of the same nature shall be carried out at what time interval? **1 year**

A periodic thorough examination of the cargo gear proves satisfactory. What percentage of the total gear must be dismantled to determine actual internal condition? **None**

A claim for cargo damages may be held against the shipowner if such damage is the result of failure of the ship's officers to ________ ensure the fitness and safety of cargo spaces

All wire rope used in shipboard cargo gear must be identified and described in a certificate. The certificate shall certify all of the following EXCEPT the ________ name of the vessel

The splice designed to pass easily through a block is called a(n) ________ Long splice

What is required to be stenciled at the heel of a cargo boom? **Safe working load**

The safe working load for the assembled cargo gear and the minimum angle to the horizontal for which the gear is designed shall be marked on the ________ Heel of the boom

A bench hook is used for ________ Sewing canvases

You are to load a consignment of lumber. Each piece measures 2-inches thick, 10-inches wide and 16-feet long. There are 30,000 pieces in the shipment. How many board feet would be listed on the Bill of Lading? **800,000**

Temporary seizings on wire rope are made with ________ Wire

What is the stress on the hauling part when lifting a 4900 lbs. weight using a twofold purchase rove to least advantage? (Allow 10 percent of the weight per sheave for friction.) **1715 lbs.**

What is the stress on the hauling part when lifting a 4,200 lbs. weight using a threefold purchase rove to advantage? (Allow 10 percent of the weight per sheave for friction. **960**

You are to load a consignment of lumber. Each piece measures 3-inches thick, 12-inches wide and 16-feet long. There are 30,000 pieces in the shipment. How many board feet would be listed on the Bill of Lading? **1,400,000**

You are to load a consignment of lumber. Each piece measures 3-inches thick, 12-inches wide and 16-feet long. There are 30,000 pieces in the shipment. How many board feet would be listed on the Bill of Lading? **1,400,000**

The force acting on a single cargo runner which is vertically lifting or lowering a load is greatest when ________ Decelerating when lowering the load
You are to load styrene in bulk, which is subject to self-polymerization. You must __________. be furnished with a Certificate of Inhibition to be maintained on the bridge.

What is meant by the term "two-blocked"? The bottom block touches the top block.

The greatest strain, when lifting a load with the jumbo purchase, is on __________. the hauling part because it must absorb the frictional losses of all the sheaves.

What is the volume in a cone with a base diameter of 23 feet and a height of 14 feet? **1,938.89 cubic ft**

A survey of refrigerated cargo, to certify that proper methods of stowage were utilized, can be conducted by the __________. National Cargo bureau.

51. A snatch block would most likely be used as a __________. Fairlead

Chafing gear __________. reduces and prevents wear caused by the rubbing of one object against another.

Which material should NOT be used to secure cargo on deck for a voyage? Fiber rope

If you were to pass a stopper on a wire rope, what should the stopper be made of? Chain

Which statement concerning the lashings of containers with solid bar or wire rope lashings is TRUE? Stack weights should be less when using a solid bar lashing as compared to a wire lashing.

The securing systems for containers were developed to prevent container movement during which ship motion? Roll

The weight of the container and its contents is supported on deck by what part(s)? Four lower corner castings

The lashings on a stack of containers with interlocking fittings restrain the forces that cause __________. Racking

When referring to dry bulk cargoes, the term "flow state" __________. refers to the saturation of a dry bulk product with water to the point where it acts as a liquid.

On the fully containerized ship, approximately one-third or more of the cargo is on deck above the rolling center. Top stowed containers are subject to __________. accelerations greater than on conventional vessels.

Under normal weather and sea conditions when securing a stack of containers with twist locks, lashings are required when the tier exceeds what height? Two containers.

If reefer spaces are not properly cleaned prior to loading cargo, it will most likely cause __________. mold to develop on commodities.

If you are loading fruit in reefer spaces and you notice that the fruit is beginning to mold, you should __________. write up exceptions on the cargo.

A block and tackle is "rove to advantage". This means that the __________. hauling part leads through the movable block.
In LNG operation, Vapour generated are returned to shore via the vapour return connection using - **HD compressor**.

In LNG operation, to control tank pressure, vapour generated in tanks should be _______? **Sent to the boiler and burn as fuel.**

In LNG vessels, leaking occurs, low temperature of LNG will result in rapid ____? **Vaporization**

Entry permit must not be issued to any personnel until the space in question has been fully ventilated and the oxygen content is ____? **21%**

For LNG carriers, annular spaces during normal voyages are usually filled up with ____? **Dry air**

For LNG vessels, one of the first actions to be taken when fire occurs is to effectively stop the transfer operation by activating the _____? **ESDS system**

The expansion of contained boiling liquid is to be avoided and this is best done by _____ the containment by water spray. **Bending**

Liquefied petroleum gases (LPG) are produced by _____ **From natural gas streams and as by-product of chemical plants**

Which of the following gasses are toxic, colorless alkaline liquid with a pungent odor? **Ammonia**

To "shore up" the main deck for the stowage of deck cargo means to __________. **strengthen the main deck by placing pillars underneath it in the tween-decks**

A vessel has an amidships superstructure. Which location would be most suitable for on-deck stowage of automobiles? **On top of the hatch immediately aft of the midships house**

A 30,000 DWT tankship is required to have an IOPP certificate when __________. **calling at ports in another country signatory to MARPOL 73/78**

You are the Master of a 30,000-DWT tankship. The vessel is engaged in trade with another country signatory to MARPOL 73/78. Which statement is TRUE? **The IOPP Certificate for an inspected vessel is valid for 5 years.**

Grade D combustible liquids have a maximum flash point of __________. **149 degree F**

Grade E combustible liquids have a flash point of __________. **150°F or above**

Your containership has a container displaying a hazardous cargo placard. The placard has the number 2206 on it. This indicates that it is carrying what cargo? **Isocyanates, n.o.s**

A flammable liquid having a Reid vapor pressure of 8½ P.S.I.A. or less and a flash point of 80°F or below is grade __________. **C**

7. For the purpose of regulating tank vessels, flammable liquids are liquids which will __________. **give off flammable vapors at or below 80°F (27°C)**

A combustible liquid with a flash point of 90°F would be grade __________. **D**
Nonflammable gases should have what kind of label? **Green**

Your ship is carrying hazardous cargo. During a daily inspection, you notice that some of the cargo has shifted and several cases are broken. You should FIRST __________. **report the facts immediately to the Master, who will make a decision**

If you carry packaged hazardous cargoes on a break bulk vessel bound foreign, you must __________. **have the shipping papers indicate the proper shipping name and the technical name of n.o.s. cargoes**

Segregation of cargoes refers to __________. separating cargoes so that the inherent characteristics of **one cannot damage the other**

Certain cargoes must be segregated because of their __________. **inherent characteristics**

Modern tankers are designed with the dangerous area separated from the safe area by: **Accommodation**

A tanker with specially built spherical tanks designed for pressure is a/an: **Liquefied Natural Gas Tanker**

The boiling point of LNG is _____? **-162 C**

The simplest hydrocarbons which is the main constituent of natural gas is _____? **Methane**

The lowest temperature at which petroleum will remain fluid is _____? **Flash point**

The viscousity of oil is defined as _____? **Its resistance to flow**

The mass per unit volume of gas or vapour under specific conditions of pressure and temperature is ____? **Vapour density**

The only cargo whose vapour may be utilized as fuel is _____? **Methane**

The chemical formula for hydrogen sulphide is _____? **H2S**

A group of organic compounds consisting exclusively of the elements carbon and hydrogen is: **Hydrocarbons**

The common name for propane and butane is ____? **LPG**

The chemical formula for methane is ____? **CH4**

In LNG carriage, RGB means ____? **Return gas blower**

Any procedure using welding, fusing, melting and heating works using fire/sparks are in general termed as ____? **Hot work**

28. The International Code for the Safe Carriage of Grain in Bulk applies to ships; **Regardless of size**

The angle of heel at which openings in the hull, superstructures or deckhouses, which cannot be closed weathertight is immersed, is called; **Angle of flooding**
Under the stability requirements of the IMO grain rules, the initial metacentric height after correction for the free surface effects of liquid in tanks shall not be less than ____? 0.10 m

The definition of existing ships in the IMO grain rule means a ship, the keel of which is laid before 25 May ____? 1980

The IMO Grain rules allows ships not having on board a document of authorization issued in accordance with A3, be permitted to load bulk grain provided that; The total weight of the bulk grain shall not exceed one third of the deadweight of the ship.

Vessels carrying grain cargoes are trimmed to level all free grain surfaces and to; Minimize the effect of grain shifting.

When calculating the dimensions of division loaded on one side, the working stresses for division of wood should be ____? 1.57 kN/cm2

A shifting board of 50mm thickness was placed in a partly filled compartment. What is the maximum unsupported span allowed in this instance? 2.5m

Among the required information in printed booklet form provided to the Master, what is NOT required from the following? Trimming tables

You are on a multiple-product chemical tanker and will carry cargoes of ethanolamine, methyl acrylate, and glycerine. Which statement is true? Glycerine is compatible with both of the other cargoes.

Which statement about the dangerous cargo manifest is FALSE? Shipments of hazardous and non-hazardous cargoes may be listed on the manifest if they are destined for the same consignee.

Which statement about the dangerous cargo manifest, carried on a ship, is TRUE? The manifest must be kept in a designated holder on or near the bridge.

Which entry on a dangerous cargo manifest concerning the classification of a cargo is NOT correct? Division 3.1

Which entry on a dangerous cargo manifest concerning the classification of a cargo is correct? Class 8

The dangerous cargo manifest does NOT indicate __________. the net weight of each hazardous cargo.

When discharging an oil cargo, the first consideration is to __________. Get the bow up

The certificate of loading required by each vessel carrying grain in bulk is issued by the __________. National Cargo Bureau

You have orders to load cargoes of carbon disulfide, diisopropylamine and pyridine on your multi-product tankship. Which statement is TRUE? Diisopropylamine must be separated from carbon disulfide by two barriers (cofferdams, voids, empty tanks, etc.)

Sulfuric acid is a __________. Colorless-to-brown liquid with a choking odor when hot.
While loading a cargo of grain, your vessel develops a list to starboard. This will be corrected by 
_________. **The list man changing the discharge location of the chutes**

Atmospheres laden with coal dust or grain dust caused by loading these cargoes __________. **may be explosive in some concentrations**

The flash point of vinyl chloride is __________. **-108°F (-78°C)**

Another name for coal naphtha that would appear on a dangerous cargo manifest is __________. **Benzene**

What is an explosion hazard when exposed to flame? **Toluene**

While loading a cargo of grain, your vessel develops a list to starboard. This will be corrected by 
__________, **the list man changing the discharge location of the chutes**

Atmospheres laden with coal dust or grain dust caused by loading these cargoes __________. **may be explosive in some concentrations**

Another name for coal naphtha that would appear on a dangerous cargo manifest is __________. **Benzene**

Flammable liquids should have what kind of label? **Red**

Which statement about the carriage of coal is true? **Freshly worked coal is more dangerous than weathered coal.**

Which cargo would require a dangerous cargo manifest? **Cotton**

What produces the MOST dangerous vapors? **Anhydrous ammonia**

Carriage of dangerous cargoes either in bulk or in package form is covered under SOLAS ________? **Chapter VII**

Under The IMDG code, Substances liable to spontaneous combustion are classified as ____? **Class 4.2**

Under the IMDG code, Infectious substances are classified as ____? **Class 6.2**

Class 1 Explosives of the IMDG code have ________? **Six divisions**

Under the IMDG code, Toxic gases are classified as ____? **Class 2.3**

Reporting of incidents involving dangerous goods are covered under IMDG code ____? **Part A**

Under the IMDG code, Oxidizing substances are classified as ________? **Class 5.1**

The capita letter “Z” designating the packaging group(s) means. **For packing group III only**

When goods in different compatibility groups are transported on deck they should be stowed not less than _____? **6 meters apart**
68. When working close to a tank opening where fumes may be present, you should _______. Stand at right angle with respect to wind direction to the tank opening.

You are on a fully loaded tanker on an even keel. Which of the following actions would create the biggest trim by the head? Shifting 300 tons from afterpeak tank to the forepeak tank.

When planning the loading or discharge of a VLCC (more than 100,000 dwt) what is the most important consideration? Limits of the bending moments.

What is the difference between the pressure at a point being measured and the perfect vacuum? Absolute pressure.

Atmosphere laden with coal dust or grain dust cause loading these cargoes __________. May be explosive in some concentrations.

Which vessel is most likely to be loaded full but not down? A break bulk vessel loaded with palletized cargo.

Which statement is NOT true concerning precautions during fueling operations? All engines, motors, fans should be shut down when refueling.

Oil may NOT be transferred unless ________. Discharge containment equipment are in place.

Sometimes it is desirable to connect a member both by riveting and welding. Which statement is TRUE concerning this procedure? The welding must be completed before the riveting commences.

A welded joint's effectiveness is considered ________. 100%

Shell plating is __________. the outer plating of a vessel.

In ship construction, keel scantlings should be the greatest ________. Amidships.

The main function of the core of a wire rope is to ________. support the strands laid around it.

Which arrangement of shell plating is used most in modern shipbuilding? Flush.

While in dry dock your vessel will be belt-gauged. This process involves ________. drilling or sonic-testing the hull to determine the plate thickness.

What is NOT an advantage of ship construction methods using welded butt joints in the shell plating? Reduces plate stress.

Shell plating that has curvature in two directions and must be heated and hammered to shape over specially prepared forms is called ________. furnaced plate.

A thirty pound plate would be ________. 3/4" thick.

The joint formed when two steel shell plates are placed longitudinally side to side is called a ________. Seam.
Owing to the greater girth of a ship amidships than at the ends, certain strakes are dropped as they approach the bow and stern to reduce the amount of plating at the ends. These strakes are called __________. drop strakes

13. The fore and aft run of deck plating which strengthens the connection between the beams and the frames and keeps the beams square to the shell is called the __________. Stringer strake

Which statement about a vessel's stability while dry-docking is TRUE? Every ton of weight bearing on the blocks acts as if a ton of weight was removed at keel level.

The garboard strake is the __________. row of plating nearest the keel

16. To reduce the number of strakes at the bow, two strakes are tapered and joined at their ends by a single plate. This plate is known as a __________. stealer plate

The strake on each side of the keel is called a __________. Garboard strake

18. The term "strake" is used in reference to __________. Hull platings

Molded depth is measured from the __________. inside of the shell

Progressive flooding is controlled by securing watertight boundaries and __________. pumping out flooded compartments

What is NOT an item that requires the vessel to be dry-docked? Verification of load line measurements

Wale shores would be used when dry docking a vessel with __________. excessive deadrise

Which statement concerning dual-tonnage vessels is TRUE? A single-deck vessel may not be assigned dual tonnages.

Your vessel was damaged and initially assumed a significant list and trim; however, further increase has been slow. Based on this data, what should you expect? The vessel can probably be saved if further flooding can be stopped.

After an explosion, repair of emergency machinery and services should be accomplished __________. after control of fire, flooding, and structural repairs

26. Progressive flooding may be indicated by __________. a continual worsening of list or trim

27. The interval time between the stern post landing on the blocks and the ship taking the blocks overall is referred to as the ________? Critical period

During the critical period of drydocking, part of the weight of the ship is borne by the blocks and creates an upthrust at the stern and increases as the water level falls. This upthrust will cause a(an) ________? Virtual loss of metacentic height

A vessel being drydocked has a displacement of 15,000 tons, TPC 5 tons, KM 3.5 meters, GM .05 meters, and has taken the blocks fore and aft at 3 meters draft. Find the GM when the water level has fallen 0.6 meter. 0.2 – 0.25 meters.
Bulkhead spacing throughout the cargo tank is determined by _______? **The length of the cargo tanks**

31. The deterioration of steel due to the chemical and electro-chemical reaction to its environment is called _______? **Corrosion**

The contamination in the environment such as soluble salts that are present in moisture and oxygen in air are called _______? **Electrolytes**

The underwater hull of a vessel is submerged in water and needs corrosion protection, the most common and effective corrosion protection for this area is _______? **Cathodic protection**

Ballast tanks are subjected to sea water and therefore needs special corrosion protection, the most commonly used are _______? **Cathodic and coating protection**

Paint protection are effective in retarding the corrosion process by limiting the access to the substrate of the _____? **Electrolyte**

Sacrificial anodes are good corrosion protection because zinc, aluminum or magnesium are _____ the electrochemical table than steel. **Higher up**

The most effective method of corrosion removal is the ____? **Abrasive blasting**

When using conventional paints, shot blasting standard for outside hull and upper deck must conforme with _____? **SIS-St 3**

Coating defects of paint which have bubbles that may contain liquid and are created by localized loss of adhesion are called _______? **Blisters**

The usual method of determining the wet film thickness of applied paints is thru the _____? **Comb gauge**

The BEST information on the nature and extent of damage to the vessel is obtained from __________. **personnel at the scene of the damage**

A "liner" in riveted construction of a vessel is a(n) _________. **small plate which fills the aperture between riveted strakes and the vessel framing**

The use of liners in riveted construction is eliminated by using __________. **Joggled construction**

Which type of weld testing can be used to detect internal flaws? **Ultrasonic**

The type of joint formed when an edge of one plate is laid over the edge of the plate to which it is riveted is a ___________. **Lap joint**

Which weld fault can only be detected by a method that examines the internal structure of a weld? **Lack of penetration**

A vessel is constructed with a steel hull and an aluminum superstructure. Which statement is TRUE? **The aluminum structure is usually attached to a steel coaming by a method that insulates the two metals.**

What is the purpose of cant frames in steel vessels? To provide strength to shell plating at the stern
Ultrasonic testing is used to determine the thickness of a vessel's shell plating and to **test welds for subsurface defects**.

What welding pattern is NOT used to permanently attach a stiffener to a plate? **Tack**

The welds used to attach stiffeners to a plate are known as **fillet welds**.

The type of joint formed when a third small plate is riveted over two plates butted together is called a **Strap joint**.

The welds used to join shell plates in flush construction are known as **Butt welds**.

Rivets are usually made of **Mild steel**.

Which is NOT an advantage of the flush method of welded shell plating? **Reduces plate stress**.

The joint formed when two steel plates are placed end-to-end is called a **Butt**.

The "grip" of a joint represents the **thickness of the connected members**.

The horizontal flat surfaces where the upper stock joins the rudder are the **rudder palms**.

When riveted joints occur at the ends of plating they are called **Butts**.

A wooden plug fitted tightly in the vent of a damaged tank may prevent the tank from **filling completely**.

Which statement is true concerning repairs on the hull of a vessel which is to be riveted and welded? **Welding must be completed before the riveting begins**.

The smallest size of flaw that can be detected on a radiograph examination of a weld will be indicated by the **Penetrometer**.

Which type of weld testing can be used to detect internal flaws? **Radiographic**.

The shearing stresses on a ship's structure are usually greatest at **The ship's quarter length point**.

The shearing stresses on a ship's structure are usually greatest at **The ship's quarter length point**.

You must shore up a bulkhead due to solid flooding forward. The bulkhead approximates a rectangle. The center of pressure of the shores on the bulkhead should be located **approximately halfway up the bulkhead**.

Which statement about bilge keels is CORRECT? **They increase resistance to rolling**.

"Limber" is a term associated with **Drainage**.

Periodic surveys to renew the load line assignment must be made at intervals NOT exceeding **five years**.
69. What is the period of validity of a Cargo Ship Safety Equipment Certificate? **60 months**

The fitting at the end of a cargo line in a tank that allows suction to be taken close to the bottom of a tank is a __________. **Suction lines are fitted with a non-return valve**

The Sheer Plan __________. **shows a longitudinal side elevation**

72. What is the period of validity of the SOLAS required Cargo Ship Safety Construction Certificate? **60 months**

The wooden plug inserted in the vent of a damaged tank should be removed if you are going to __________. **Pump from the damage tank**

What term indicates the immersed body of the vessel forward of the parallel mid-body? **Entrance**

Small hull leaks can be temporarily repaired by __________. **Caulking**

What must be accurately determined to assess the potential for progressive flooding after a vessel has been damaged? **The integrity of the water tight boundaries**

Strengthening damaged bulkheads by using wood or steel is called __________. **Shoring**

A void or empty space between two bulkheads or floors which prevents leakage from one to the other is called; **Cofferdam**

The positioning and temporary fastening together of units or fabricated parts of a ship prior to welding is called; **Erection**

the foremost major watertight bulkhead is called; **collision bulkhead**

The outward curvature of the side shell above the waterline and promotes and promotes dryness and associated with the fore end of the ship is called; **Flare**

The curvature of the decks in the transverse direction and measured as the height of deck at center above the height of deck at side is called; **Camber**

These are provided in the double bottoms of some vessels, these run from forward of the engine room bulkhead to the collision bulkhead and utilized to carry the double bottom piping. **Duct keels**

Where a ship is classed for the carriage of heavy, or ore cargoes, _____ framing is adopted for the double bottom? **Longitudinal**

This is the main single criterion with reference to metals, it is a measure of the materials ability to withstand the loads upon it in service: **Tensile strength**

This is the ability of a material to undergo permanent changes in shape without rupture or loss of strength: **Ductility**

Find the surface area of a rectangular tank 9.0 x 3.0 x 1.5 meters **90 sqm**
A vessel is constructed with a steel hull and an aluminum superstructure. Which statement is TRUE? **The steel at the area of aluminum-to-steel connection must be closely checked for galvanic corrosion**

Your vessel has been in collision and after assessing the damage, you begin down flooding. This will cause the KB to do which of the following? **Rise**

Holes in the bulwark, which allow deck water to drain into the sea, are ______? **Freeing ports**

A “choch” is a ______? **Casting fitted at the side of a weather deck used as a fairlead**

92. Which term refers to a transverse curvature of the deck **Camber**

To what depth, in salt water, can a sealed box made of a metal which is capable of withstanding a pressure of 500 kgs. per square centimeter be sunk before it will collapse? **4.878 meters**

A shroud is _______? **A heavy wire extending from the mast, athwartships to support the mast**

As defined for subdivision calculations, it is the percentage of that space which can be occupied by water. What is it? **Permeability**

Beams are cambered to _________? **Provide drainage from deck**

What is NOT an advantage of double bottom vessels? **They are less expensive to construct due increase access space**

The welds used to join shell plates in flush construction are known as _________. **Butt welds**

The fore and aft run of deck plating which strengthens the connection between beams and the frame and keeps the beam to the shell is called ______? **Stringer strake**

One function of a bulwark is to ______. **Help keep the deck dry**

When riveted joints occur at the ends of plating they are called ______. **butts**

What is meant by “spotting the boom”? **Placing it in a desired position**

A heated bulkhead has the effect on a hygroscopic commodity of **Raising the vapor pressure of the commodity**

The terms “cant frame” and “counter” are associated with the vessel’s _________. **stern**

A cofferdam is ______. **made by placing two bulkheads a few feet apart**

Damage bulkheads after collision take a permanent set which is independent of the panting or bulge cause by water pressure. **To control this, you should: install shoring so that it supports the damaged bulkhead without pushing them**

While in drydock, your vessel will be belt-gauged, **This process involves: sonic testing the hull to determine the hull thickness**.
Your vessel has run hard aground in an area subject to significant wave action. Backing full astern failed to free her. What action should be taken next? **flood empty tanks to increase bottom pressure and prevent inshore creep**

When vessels are over 405 feet in length, how many bulkheads are fitted? **five**

Deep tanks are normally located aboard vessel: **abaft engine space**

Your vessel was damaged and initially assumed a significant list and trim however, further increase has been slow. Based on this data, how should you expect? **the vessel can probably be saved if further flooding can be stopped**

this provides a means of transferring loads between decks and fastening together the structure in vertical direction; **pillars**

A deck beam does not; **lessen the longitudinal stiffness of the vessel**

The margin plate is the; **outboard strake of the plating on each side of the inner bottom**

Watertight equipment means: **enclosed equipment so constructed that steam of water from those under a head of 35 ft. can be played on the apparatus without leakage**

When a vessel drydock with the cargo on board, additional ________ are necessary for support bilge corner.

The vertical plate of vessel's girder is called; **web**

This is the patent device use for plugging a hole to neutralized the flooding in a compartment; **fish-bolt**

This is usually applied when two different metals form a corrosion cell; **galvanic corrosion**

shell plating that has a curvature in the direction and must be heated and hammered to shape over specially prepared forms is called ____? **furnaced plates**

A bulkhead which performs the supporting function similar to a pillar is called; **watertight bulkhead**

What is NOT an item requires the vessel to be dry-docked? **verification of loadline measurement**

You are loading at port A governed by the summer load line mark for a voyage to port B governed by the winter mark. The fresh water allowance is 10", and the hydrometer reads 1.020. Which of the following statements is TRUE? **you may not load to summer mark plus 2 inches if you will be at the winter mark when entering the winter zone**

Brackets joining the deck beam and the side frames are known as; **beam knees**

Shell plating is _________. **the outer plating of a vessel**

While in dry dock your vessel will be belt-gauged. This process involves ________ . **drilling or sonic-testing the hull to determine the plate thickness**

The joint formed when two steel shell plates are placed longitudinally side to side is called a _________. **Seam**
Which statement about a vessel's stability while dry-docking is TRUE? *Every ton of weight bearing on the blocks acts as if a ton of weight was removed at keel level.*

To reduce the number of strakes at the bow, two strakes are tapered and joined at their ends by a single plate. This plate is known as a __________. *stalker plate*

Your vessel was damaged and initially assumed a significant list and trim; however, further increase has been slow. Based on this data, what should you expect? *The vessel can probably be saved if further flooding can be stopped.*

Paint protection are effective in retarding the corrosion process by limiting the access to the substrate of the _____? *Electrolyte*

Coating defects of paint which have bubbles that may contain liquid and are created by localized loss of adhesion are called _____? *Blisters*

The usual method of determining the wet film thickness of applied paints is thru the ____? *Comb gauge*

A "liner" in riveted construction of a vessel is a(n) __________. *small plate which fills the aperture between riveted strakes and the vessel framing*

Ultrasonic testing is used to determine the thickness of a vessel's shell plating and to ________. *test welds for subsurface defects*

Rivets are usually made of __________. *Mild steel*

You must shore up a bulkhead due to solid flooding forward. The bulkhead approximates a rectangle. The center of pressure of the shores on the bulkhead should be located __________. *approximately halfway up the bulkhead*

"Limber" is a term associated with ________. *Drainage*

Holes in the bulwark, which allow deck water to drain into the sea, are _____? *Freeing ports*

The floors in a vessel’s hull structure are kept from tripping or rolling over by _____. *bottom longitudinal*

Vertical structural members attached to the floors that add strength to the floors are called _______. *stiffeners*

Battens are fitted in cargo holds across the frames of the vessel from the turn of the bilge upward. The purpose of these cargo battens is *To prevent cargo from coming in contact with the vessel’s frames or shell plating.*

Panting frames are located in the ________. *fore and after peaks*

In a transversely framed ship, the transverse frames are supported by all of the following EXCEPT ________. *web frames*
In a transversely framed ship, the transverse frames are supported by all of the following EXCEPT _________, **web frames**.

In ship construction, keel scantlings should be GREATEST: **amidship**

The extension of the after part of the keel in a single screw upon which the stern post rests is called the: **Skeg**

Which is NOT an advantage of the flush method of welded shell plating? **reduces plate stress**

Which is NOT an advantage of the flush method of welded shell plating? **reduces plate stress**

The uppermost continuous hull plating is called the: **Sheer Strake**

A drawing used to identify individual strakes and plates is called a: **Shell Expansion Plan**

Bulkhead stiffeners are attached to the tank top by: **Brackets**

A keel structure constructed to allow piping to run through it is called a ______. **Duct Keel**

Additional bottom stiffening is required immediately aft side of the collision bulkhead to resist: **Pounding**

A vessel constructed without bulkheads on the main cargo deck will be assigned the class notation: **Ro-Ro**

The minimum number of transverse bulkheads required for a vessel with machinery aft is: **Three**

The lower end of the stem bar is attached to a: **Keel Plate**

A General Arrangement drawing gives details of a vessel's: **Layout**

A perforated flat is part of the structure in the: **Fore Peak**

The hinge on which a rudder turns is called a: **Gudgeon**

Moulded beam is the measurement taken to the: **Inside of the Plating**

The top of a stern frame is connected to the vessel's structure at the: **Transom Floor**

A drawing used to identify individual strakes and plates is called a: **Shell Expansion Plan**

The pipe which directs the anchor cable from the windlass to the chain locker is called a: **Spurling**

The part of an anchor which takes hold on the bottom is the ________, **fluke**

Which of the following is NOT an item that requires the vessel to be drydocked? **Verification of load line measurement**

The best information on the location of the blocks when drydocking a vessel is contained in the ________, **Ship’s Docking Plan**
This plan shows an endwise view of the ship’s molded form where the transverse frame sections of the ship at various stations drawn: **body plan**

What is the ship’s broad profile which gives all data relating to the capacity of cargo spaces, tanks, bunkers, storerooms and location of the center of gravity of each? **capacity plan**

What term indicates that the dimension is measured from the inner face of the shell or deck plating? **Molded**

This plan shows the general outline of the ship, contour of the stem and stern, any sheer of the decks, the deck positions and all waterlines in a longitudinal side elevation: **Profile or sheer plan**

The Tensile stress is a result of two forces acting in ________. **opposite directions on the same line**, tending to pull the material apart

The shearing stresses on a ship’s structure are usually greatest at ________. **the ship’s quarter length points**

Signs of racking stresses generally appear at the ________. **junction of the frames with the beams and floors**

The distance that a ship moves forward with each revolution of its propeller is called: **cavitation**

Which of the following statements about a tunnel bow thrusters is TRUE? **it provides lateral control without affecting headway**.

Ordinarily, the use of the bow thrusters becomes ineffective: **over 3 knots headway**

Kort nozzles are installed around the propellers of some vessels to ________. **increase the trust of the propeller**

Flame screens are used to ________. **prevent flames from entering tanks**

A spark arrestor ________. **prevents sparks from getting out of an engine’s exhaust system**.

A disk with horizontal line through its center equivalent to the summer load line is called the ________. **plimsol mark**

A crack in the deck plating of a vessel may be temporarily prevented from increasing in length by ________. **drilling a hole at each end of the crack**

The type of welding employed in shipyard is primarily: **electric arc**

A welded joint’s effectiveness is considered: **100 %**

The smallest size of flaw that can be detected on a radiograph examination of a weld will be indicated by the : **penetrometer**

The welds used to attach stiffeners to a plate are known as : **fillet welds**

Ultrasonic testing is used to determine the thickness of a vessel’s shell plating and to: **test welds for subsurface defects**
A “liner” in riveted construction of a vessel is a (an) ______. small plate which fills the aperture between riveted strakes and the vessel framing.

After riveting is completed, the joints on the shell of a vessel are generally made watertight by _____. caulking

The “grip” of a joint represents the: thickness of the connected members

The use of liners in riveted construction is eliminated by using _____ . joggled construction

Sometimes it is desirable to connect a member both by riveting and welding. Which statement is TRUE concerning this procedure? the welding must be completed before the riveting commences

Plates that must be heated and hammered to shape over specially prepared forms is called: furnaced plate

Metal plates used to secure the top of the hawse pipe to prevent water from passing through are called: buckler plates

Horizontal plates fitted across the forepeak of the vessel to rigidly fasten together the peak frames, the stern, and the outside framing are called: breast hook

The deck plating are placed on a foundation that runs athwartship from side to side of the vessel. This is the : deck beam

This refers to the backbone of the vessel running the entire length of the ship. keel

A large basin cut into the shore, closed off by a caisson, and used for drydocking of ships is known as a ______. graving dock

Wale shores would be used when drydocking vessel with: excessive deadrise

On a single-screw vessel, a function of the stern frame is: furnishing support to the rudder, propeller shaft and transom frame

Lighter longitudinal stiffening frames on the vessel’s side plating are called ___. stringers

Reinforcing frames attached to a bulkhead on a vessel are called ________. stiffeners

To reduce the number of strakes at the bow, two strakes are tapered and joined at their ends by a single plate. This plate is known as _____. stealer plate

While in drydock your vessel will be belt gauged. This process involves ____ . drilling and sonic testing the hull to determine the plate thickness

The result of two forces acting in opposite directions and along parallel lines, is an example of what type of stress? Shear

2. Tensile stress is a result of two forces acting in __________. opposite directions on the same line, tending to pull the material apart
Weight concentration in which area will cause a vessel's bottom to be subjected to tension stresses? **Amidships**

A disk with a horizontal line through its center, equivalent to the summer load line, is called the __________. **Plimsoll mark**

5. Separating both blocks of a tackle to prepare it for reuse is called __________. **Overhauling**.

If two falls are attached to lift a one-ton load, what angle between the falls will result in the stress on each fall being equal to the load being lifted? **120°**

7. The load line regulations are administered by the __________. **Port state**

A sling is rigged on a piece of pipe weighing 1000 lbs. The angle between the sling legs is 140° and the legs are of equal length. What stress is exerted on each sling leg when the pipe is lifted? **1462 lbs**.

The term that indicates how many tons of cargo a vessel can carry is __________. **Deadweight**

What organization assigns loadlines to vessels? **Classification societies**

Which factor does NOT affect the required freeboard of a cargo vessel? **Condition of trim in normal operation**

The maximum theoretical stress that can be developed on a guy in a yard and stay rig is limited by the __________. **Lifting capacity of the winch**

The greatest horizontal stress between the heads of the booms in the yard and stay rig occurs when the load is in such a position that the __________. **Falls are at an equal angle to the horizontal**

How much weight can you lift by applying 100 kgs. of force to a twofold purchase rigged to disadvantage (do not consider friction)? **400 kgs**.

What is the mechanical advantage of a threefold purchase when rove to disadvantage and neglecting friction? **6**

A load line is assigned by __________. **Classification society**

The maximum draft to which a vessel can legally be submerged is indicated by the __________. **Loadline mark**

On a crane, the boom indicator tells the operator what angle the boom angle is compared to the __________. **Horizontal position**

The boom stops on a pedestal crane prevent the boom from __________. **Being raised too high**

What is NOT surveyed at an annual load line survey? **The bilge pumping system**

The primary purpose of a load line is to establish required __________. **Minimum freeboard**

What would have the greatest affect on a vessel's longitudinal strength? **Grounding damage to the bilge strake, just aft of midships**.
After riveting is completed, the joints on the shell of a vessel are generally made watertight by Caulking. When must the Master of a vessel log the position of load line marks in relation to the surface of the water in the Official Logbook? Prior to getting underway.

Rolling is angular motion of the vessel about what axis? Longitudinal. Which term indicates the rise in height of the bottom plating from the plane of the base line? Deadrise. What term indicates the line drawn at the top of the flat plate keel? Baseline. What term indicates the immersed body of the vessel aft of the parallel mid-body? Run. The angular movement of a vessel about a horizontal line drawn from its bow to its stern is Rolling. What term indicates a curvature of the decks in a longitudinal direction? Sheer. What descriptive term indicates that the dimension is measured from the inner face of the shell or deck plating? Molded. The upward slope of a vessel's bottom from the keel to the bilge is called Rise of bottom. The vertical motion of a floating vessel is known as Heave. Pitching is angular motion of the vessel about what axis? Transverse. Which term refers to a transverse curvature of the deck? Camber. What term indicates the midships portion of a vessel that has a constant cross section? Middle body. What term indicates an inward curvature of the ship's hull above the waterline? Tumble home. Angular motion about the vertical axis of a vessel is called Yaw. The point that is halfway between the forward and after perpendicular and is a reference point for vessel construction is the Amidship. Heave is motion along the Vertical axis.

What term indicates the length measured along the summer load line from the intersection of that load line with theforeside of the stem and the intersection of that load line with the after side of the rudder post? Length between perpendiculars. What term indicates the outward curvature of the hull above the waterline? Flare. A spreader bar is used to protect the upper part of a load. The horizontal port or starboard movement of a vessel is called Sway. Buckler plates are metal plates secured over the tops of the hawsepipes.
Horizontal transverse motion of a vessel is known as _________. **Sway**

With a given load on the cargo hook, tension in a single span topping lift _________. **increases as the boom’s angle to the horizontal decreases**

When a cargo boom or crane is rated at varying capacities, there will be a table at the controls which relates safe working load to _________. **load radius**

The two factors which make underwater hull repair difficult are accessibility and the _________. **pressure exerted by the water**

The two factors which make underwater hull repair difficult are accessibility and the _________. **pressure exerted by the water**

The horizontal fore-and-aft movement of a vessel is called _________. **Surge**

With a given load on the cargo hook, the thrust on a cargo boom _________. **increases as the angle to the horizontal increases**

Yawing is angular motion of the vessel about what axis? **Vertical**

What is the difference between the static and dynamic forces acting on the ship’s hull? **Static forces are set up by the cargo and the sea, and dynamic forces are set up by the sea wave action**

Will the internal and external forces acting on a bulk carrier cross section change during loading operation? **Yes, the forces from the load and the sea water pressure will increase during the loading**

The strictest load line regulations apply to _________. **Passenger ships**

Loadline markings are set by? **Classification society**

Keeping the draft at or below the load line mark will insure that the vessel has adequate ________. **Reserve buoyancy**

The correction to KG for longitudinal free surface effects for a vessel can be found by dividing the vessel’s displacement with the: **The sum of the longitudinal free surface moments of the vessel**

What will happen to the center of gravity of a vessel when weight is added on a vessel? **Move in the direction of the added weight**

In the presence of external forces, the center of buoyancy of an inclined vessel is vertically aligned with the ________? **Metacenter**

the length of the vessel is 150m long, 20m beam and 12m deep on an even keel at a draft of 8 meters, block coefficient 0.8. the vessel is floating in sea water. Find the cargo to discharge so that the vessel will float at the dame draft mark in fresh water? **480 tons**

The difference between the starboard and port drafts caused by shifting a weight transversely is: **List**

Freeing ports on a vessel with solid bulwarks ________? **Allow water on deck to flow off rapidly**
A large metacentric height will result in a _______. **Short and quick rolling period**

When the height of the metacenter is less than the height of the center of gravity, a vessel has what type of stability, _______. **Negative**

Signs of racking stresses generally appear at the _______. **Junction of frames with the beams and floors**

A large basin cut into the shore, close off by a caisson, and used for dry-docking of vessel is known as a _______. **Graving dock**

The maximum length allowed between main, transverse bulkheads on a vessel is referred to as the _______. **Permissible length**

The term “scantlings” refers to the _______. **Measurement of structural member**

What is the definition of transverse metacenter? **The distance between the actual center of gravity and the maximum center of gravity that will allow a positive stability**

At all angles of inclination, the metacenter is _______. **Vertically above the center of buoyancy**

The most important figure in calculating the free surface content of a tank carrying liquid is ___. **Breadth**

The effects of free surface on a vessel’s initial stability do NOT depend upon the________. **amount of liquid in slack tanks**

Those vessel’s tanks that are particularly important for trimming the vessel are the-------. **peaks**

Your vessel displaces 497 tons. The existing deck cargo has a center of gravity of 2.5 ft. above the deck and weighs 24 tons. If you load 18 tons of ground tackle with an estimated center of gravity of 18 inches above the deck, what is the height of the CG of the deck cargo? **2.07 feet**

Your vessel has a displacement of 24,500 tonnes it is 529 feet long and has a beam of 71 feet, you have timed your full rolling period to be 25.0 seconds, what is your vessel’s approximate GM? **2.4 feet** (0.70m)

Your vessel has a displacement of 100,000 tons, it is 350 feet long and has a beam of 55 feet, you have timed its full rolling period to be 15.0 seconds, what is your vessel’s GM? **2.60 feet**

A vessel is inclined by moving a weight of 30 tons a distance of 30 ft. from the centerline. A 28-foot pendulum shows a deflection of 12 inches. Displacement including weight moved is 4,000 tons. KM is 27.64 feet. What is the KG? **21.34 feet**

Sixty tons of cargo are raised with a boom 45 feet from the centerline. The vessel’s displacement including the weight lifted is16,400 tons. The angle of list caused by the suspended weight is 1.5°. KM is 28.75 ft., and the BM is 17.25 ft. What is the KG? **22.46 feet**

What is the reduction in metacentric height due to free surface when a tank 60 feet long and 30 feet wide is partially filled with salt water, and is fitted with a centerline bulkhead? (The vessel has a displacement of 10,000 tons.) **0.1 foot**
A vessel displaces 869 tons and measures 135’L x 33’B. You vessel took a large wave on the after deck which measures 52’L x 33’B. The weight of the water is estimated at 52.8 tons. What is the reduction in GM due to free surface before the water drains overboard? **4.83 feet**

A vessel carries three slack tanks of gasoline (SG .68). The vessel’s displacement is 8,000 tons. Each tank is 50 ft. long and 20 ft. wide. What is the reduction in GM due to free surface with the vessel floating in sea water (SG 1.026)? **24 feet**

Your vessel’s draft is 16’-00” aft. The MTI is 500 ft-tons. How many tons of water must be shifted from the after peak to the forepeak, a distance of 250 feet, to bring her to an even draft forward and aft? The tipping center is 2 feet abaft. **48 tons**

A weight of 250 tons is loaded on your vessel 95 feet forward of the tipping center. The vessel’s MT1 is 1000 ft-tons. What is the total change of trim? **23.75 inches**

Which factor does NOT affect the required freeboard of a cargo vessel? **condition of trim in normal operation**

A vessel has a maximum allowable draft of 28 feet in salt water and a fresh water allowance of 8 inches. At the loading berth, the water density is 1,011. To what draft can she load in order to be at her marks when she reaches the sea? **(The salt water density is 1,025,) 28’04.5”**

You must shift a weight from the upper tween deck to the lower hold. This shift will _______. **make the vessel stiffer**

For a vessel inclined by the wind, multiplying the buoyant force by the horizontal distance between the lines of action of he buoyant and gravity forces gives the _______. **righting moment**

A vessel with a large GM will _______. **have more resistance to listing in case of damage**

A vessel continually lists to one side and has a normal rolling period. Which statement is TRUE? **the vessel has asymmetrical weight distribution**

Reference to freeboard categories, type A vessels are those designed specifically for the carriage of ______? **liquid cargoes in bulk**

The term deadweight refers to the cargo carrying capacity including fuel, water and stores measured; **long tons and limited by the governing loadlines**

Vessel has a fresh water allowance of 175 mm. By how much will she change her draft if she passes from water of density 1,004 to water of density 1,021 kg/m³ **119mm**

A disk with a horizontal line through its center, equivalent to the summer load line, is called the ________. **Plimsoll mark**

Which factor does NOT affect the required freeboard of a cargo vessel? **Condition of trim in normal operation**

The maximum theoretical stress that can be developed on a guy in a yard and stay rig is limited by the __________. **lifting capacity of the winch**
How much weight can you lift by applying 100 kgs. of force to a twofold purchase rigged to disadvantage (do not consider friction)? **400 kgs**.

On a crane, the boom indicator tells the operator what angle the boom angle is compared to the _________. **horizontal position**

60. Rolling is angular motion of the vessel about what axis? a) **Longitudinal**

The angular movement of a vessel about a horizontal line drawn from its bow to its stern is _________. **Rolling**

The vertical motion of a floating vessel is known as _________. **Heave**

A spreader bar is used to _________. **protect the upper part of a load**

The horizontal fore-and-aft movement of a vessel is called _________. **Surge**

With a given load on the cargo hook, the thrust on a cargo boom ________. **increases as the angle to the horizontal increases**.

Will the internal and external forces acting on a bulk carrier cross section change during loading operation? **Yes, the forces from the load and the sea water pressure will increase during the loading**

The strictest load line regulations apply to _________. **Passenger ships**

The correction to KG for longitudinal free surface effects for a vessel can be found by dividing the vessel’s displacement with the: **The sum of the longitudinal free surface moments of the vessel**

What will happen to the center of gravity of a vessel when weight is added on a vessel? **Move in the direction of the added weight**

Signs of racking stresses generally appear at the _____. **junction of frames with the beams and floors**

The term “scantlings” refers to the _____. **measurement of structural member**

A cargo plan would NOT include: **loading and discharge equipment details**

Using the ‘house fall’ method of cargo handling _______. **All choices**

The safe stowage and securing of cargoes depend on: I. Proper planning II. Execution and supervision **Both I & II**

Personnel in charge of cargo stowage and securing cargo should have: I. Proper qualification and experience II. A sound practical knowledge of the application and content of Cargo Securing Manual **Both I & II**

Your ship 12,000 tons displacement has a center of gravity 21.5 ft above the keel. You run aground and estimate the weight aground is 2,500 tons. The virtual rise in the center of gravity is ________. **5.66**

Cargo transport units, including freight containers shall be loaded, stowed and secured throughout the voyage in accordance with the cargo securing manual approved by the _____. **Administration**
On a cargo crane, the boom indicator tells the operator what angle the boom angle is compared to the __________. **Horizontal position**

With a yard-and-stay rig _______. **One boom plumbs directly over the hatch, the other boom extends to the wharf.**

On a yard-and-stay rig, the boom spotted directly over the hatch is called _______. **Yard boom**

A “bullrope” is used for _______. **Topping or lowering a boom**

All lashings and components used for securing should possess breaking strength of not less than _______. **113 kN**

Binder chains used to lash down deck cargoes may be shortened by _______. **Loadbinders or turnbuckles**

“TOM” is a timber used to secure cargo by running from _______. **I. an upper support down to the cargo II. a lower support up to the cargo I only**

When stowing bagged cargo, you wish to maintain a vertical wall or bulkhead as the stowage progresses. The bulkhead extends from one side of the vessel to the other and exceeds one section forward of the square, from the lower holds up to the tween decks. Stability of the bulkhead will be maintained by _______. **Alternating the stow with one fore and aft and the next tier athwartship.**