GUÍA DE ESTUDIO- 1ER MAQUINISTA						
Q. Number	**Question**	**IMAGEN**	**A**	**B**	**C**	**D**
		CONTROL TRIM, STABILITY AND STRESS				
1	What does "Permeability" mean?		To make a compartment watertight .	The flooding of the engine room compartment.	The relationship between the volume of a compartment and the volume available for water if bilged.	The process of making a compartment non - porous.
2	How is a "Turning Couple" formed?		A couple is formed when two equal parallel forces are acting in opposite directions.	A couple is formed when two unequal forces in a vertical position are acting in the same direction.	A couple is formed by joining two vertical posts together.	A couple is formed when two unequal parallel forces are acting in the same direction.
3	What is "Statical Stability?"		It is the basic stability information a vessel is required to carry by law.	It is the relationship between the moment of a couple and the righting moment.	It is another name for the metacentric height.	It is the ability of a vessel to return to her initial or upright position, after having been forcibly inclined.
4	What is a "Pro-metacentre?"		This expresses KM as moving away off the centreline at large angles of heel.	It is just another name for metacentre.	It is the ability of a vessel to return to an upright position.	It is the term used to indicate a vessel has a more than adequate GM.
5	What is "dynamical stability?"		It is the expression used to describe a vessel, that is in the most stable condition possible.	It is the expression used to describe the transfer of buoyancy, from one side to the other, when a vessel heels.	It is the measure of the work that is done when the vessel is inclined by external forces.	It is the energy generated by a rolling vessel.

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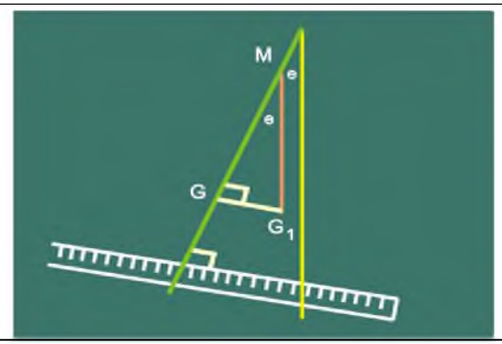
6	How would you increase the GM of a ship, loaded with a timber deck cargo, that has become "unstable?"		By completely emptying all partly filled double bottom tanks.	By jettisoning the entire deck cargo of timber.	By filling all wing ballast tanks.	By filling the small divided double bottom tanks on the lower side, whilst jettisoning the deck cargo from the higher side.
7	What is the purpose of performing an Inclining Experiment or Stability Test?		To test the safe working load of a derrick or crane.	To determine the maximum angle of heel, before a ship will capsize.	There is no need for such an experiment, because the information it gives may be obtained in various other easier ways.	It is done to find out the "GM" of a vessel, plus the Ship's Lightweight, and VCG & LCG at this Lightweight.
8	How do you ensure reliable results from an Inclining Experiment?		Perform test in calm conditions, with slack moorings, with minimum number of personnel, and minimise free surface effects of liquids.	Tighten all moorings, use a weight not less than 10 tonnes, and make an accurate sounding of all tanks.	No specific preparations are necessary, and it can be done even in very windy conditions.	It must be done in early morning or late evening, when the least number of people are likely to be around.

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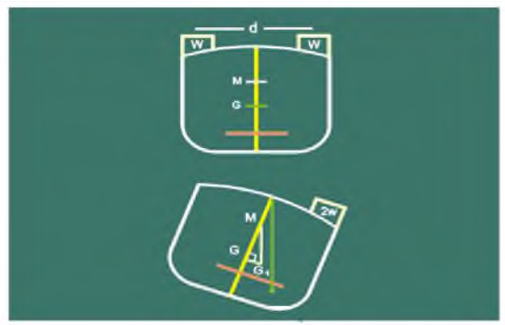
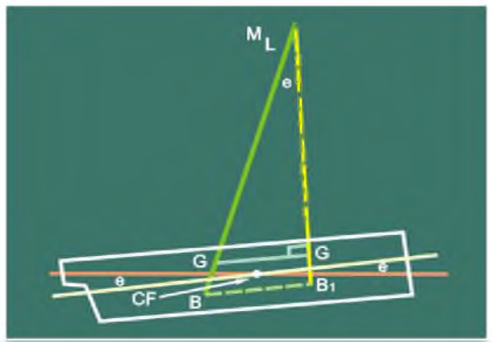
Q. Number	**Question**	**IMAGEN**	**A**	**B**	**C**	**D**
9	What formula do you use to determine the "GM" from an Inclining Experiment?		GM = w by distance by length of plumbline divided by W by deflection of the plumbline.	GM = KM by d by 1/2 length of plumbline divided by w by length of plumbline .	GM = w by length of plumbline divided by W by deflection of the plumbline.	There is no formula. You simply measure the deflection of the plumbline with a tape measure.
10	What is the "Wave Period?"		It is the comparison of the height of successive waves.	It is the time in minutes between successive wave crests, passing a fixed point.	It is the time in seconds between successive wave crests or troughs, passing a fixed point.	It is the time interval between the highest waves, in a sequence of waves.
11	What is meant by "Synchronism or Resonance?"		This is a situation used to describe gentle rolling.	This is a term used to describe violent rolling.	This is a term used to describe pitching and rolling.	This a dangerous condition that occurs when the ship's still water period and the apparent wave period are equal.
12	If your vessel is tending to "synchronise ", what should you do to alter this condition?		You should increase your speed to full, whilst maintaining the same course.	You should try to alter the wave period by altering course and by reducing speed.	You stop your ship and wait for the synchronising to stop.	You should put your ship's beam on to the sea and increase speed.

GUÍA DE ESTUDIO- 1ER MAQUINISTA

Q. Number	Question	IMAGEN	A	B	C	D
13	What do the intersecting horizontal lines signify in the diagram?		The change in the Centre of Flotation, after trimming.	They show the actual angle of trim.	The change of draft after trimming.	They only serve as a base for the two vertical lines.
14	What is the "Centre of Pressure?"		It is the point where the total thrust of the pressure could be considered to act.	It is the pressure in the centre of a specific tank.	It is the pressure at the Centre of Flotation.	It is the part that is least likely to give way to external pressure.
15	What effect does "Freeboard" have on a vessel's dynamical stability?		It does not have any effect on dynamical stability.	As freeboard increases, the range of stability also increases, and this in turn leads to greater dynamical stability.	If freeboard is greater, then the dynamical stability is correspondingly reduced.	Freeboard and dynamical stability are not related in any way.
16	What is the formula to calculate the "Volume of Displacement?"		L by 1/2 B by draft by Freeboard.	L by GM by KG.	L by B by d by Cb.	B by KM by d by Cb.
17	What is the minimum allowable value for GM?		0.35m	0.25m	0.15m	0.45m
18	What is the BM for a box-shaped vessel in terms of breadth and draught?		Breadth squared / 12xdraught.	Breadth squared / 6 x draught.	Breadth cubed / 12 x draught.	Breadth x draught / 10.
19	What are "Hydrostatic Curves" used for in ship calculations?		Obtaining the shape of the body sections.	Mainly for trim calculations for predicting end draughts.	For hydrostatic pressures on bulkheads.	For pressures at various depths in oil fuel bunkers.
20	What is the minimum allowable value for GZ?		0.35m	0.42m	0.2m	0.15m

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21	What is a "Prismatic co-efficient?"		The same as the block co-efficient.	A co-efficient for a box-shaped vessel only.	Cm / Cb.	Volume of Displacement / (midship area x LBP). Also = Cb / Cm.
22	What are "Cross Curves of Stability" used for onboard a ship?		Obtaining Statical Stability curves at known Displacements.	Giving the capacity of various holds or tanks.	Showing tank calibration values.	Similar to a set of Bonjean curves.

GUÍA DE ESTUDIO 1ER MAQUINISTA	
CONTROL TRIM, STABILITY AND STRESS	
ANSWERS	
1	C
2	A
3	D
4	A
5	C
6	D
7	D
8	A
9	A
10	C
11	D
12	B
13	B
14	A
15	B
16	C
17	C
18	A
19	B
20	C
21	D
22	A