GUÍA DE ESTUDIO - JEFE DE MAQUINAS						
Q. Number	**Question**	**IMAGEN**	**A**	**B**	**C**	**D**
		ADVANCED FIRE FIGHTING				
1	How many fireman's outfits are required to be carried on tankers?		At least four sets.	At least three sets.	At least two sets.	At least one set.
2	Why is Halon not used much fire extinguishers on board vessels?		It is not effective on oil fires.	It is too expensive.	It damages electrical equipment.	It is harmful to the ozone layer.
3	In addition to a fire suit, a fireman's outfit also comprises breathing apparatus and a fireproof lifeline. According to SOLAS- how many such sets of fireman's outfit are required to be carried by all ships?		At least one.	At least two.	At least three.	As required by the ship's administration.
4	What is the general requirement for the closing mechanism of ventilators on a ship other than one carrying more than 36 passengers?		To be remotely controlled from the central fire control panel.	Only a manual closing mechanism is allowed.	Automatic closure of ventilators is required.	Closing must be possible from outside the space being ventilated.
5	Where can ships' officers find information about the ship's fire protection arrangements, fire detection and extinguishing equipment?		In a special instruction folder at all fire control stations.	In permanently exhibited muster lists.	In permanently exhibited fire plans.	In the wheel house.
6	According to SOLAS - for carbon dioxide fire-fighting systems in machinery spaces the fixed piping system shall be such that		100 % of the gas can be discharged into the space within two minutes.	85 % of the gas can be discharged into the space within two minutes.	100 % of the gas can be discharged into the space within 3 minutes.	70 % of the gas can be discharged into the space within 2 minutes.
7	According to SOLAS - sanitary, ballast, bilge or general service pumps may be used as fire pumps provided		they are not normally used for pumping oils.	they are ready for use as a fire pump at any time.	they can be started from a position outside the engine room.	they are fitted with an automatic start connected to the fire alarm.
8	Fuel flowing in a pipe is prone to which of the following ignition sources?		Chemical reaction.	Friction.	Static electricity.	High pressure action.
9	Where can shore side personnel find necessary information on ship's fire control systems in an emergency situation ?		From the duty officer.	A copy of the fire control plan is permanently posted in prominently marked locations onboard ships.	A copy of the fire control plans/folders is stored in a watertight and prominently marked container outside the deckhouse or accommodation.	Information is to be given by the owners through the nearest rescue centre.
10	Approximately, what is the temperature of a cigarette's burning tip?		35 degrees C.	100 degrees C.	500 degrees C.	5,000 degrees C.
11	When a fire spreads because of the hot gases rising and heating other fuel sources, the fire has been spread by		conduction.	convection.	radiation.	expansion.
12	Which of the following conducts heat well?		Wood.	Steel.	Paper.	Styrofoam (Polystyrene).
13	In a mixture of flammable vapour and air, if there is too much vapour and not enough air to support combustion, we say the mixture is		over concentrated.	saturated.	too lean.	too rich.
14	Some cargoes, such as certain types of coal, can heat themselves up to a temperature where they can automatically ignite. What is this process called?		Biological heating.	Spontaneous combustion.	Nuclear fission.	Biomass conduction.
15	When is the risk of fire greatest?		When the vessel is at sea in stormy weather.	When the vessel is in port, particularly dry-dock.	When the vessel is in hot, dry climates.	When the vessel is in dense traffic situations.
16	Which of the following does not need to be done right after a fire drill?		Note any defects in the equipment for repair or replacement.	Return all the equipment to its correct place.	Recharge extinguishers and compressed air bottles.	Have a debriefing with all members of the safety committee.

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17	What is meant by the term "self ignition temperature (S.I.T.)?		The lowest temperature where enough vapours are given off that they will ignite and then go out if an external ignition source is applied.	The lowest temperature where enough vapours are given off that they will ignite and keep burning if an external ignition source is applied.	The lowest temperature where the vapours given off will automatically ignite without the presence of an external ignition source.	The lowest temperature that a liquid will start giving off vapours.
18	What percentage of air is made up by oxygen?		100%	4%	21%	78%
19	At what percentage of oxygen in the atmosphere is it possible to have a fire?		At 21%	Above 8%	Below 4%	At 100%
20	Which of these is an example of a Class D fuel?		Electricity.	Liquid.	Gas.	Metal.
21	Which of the following fuels has the lowest flash point?		Diesel fuel.	Coal	Candle wax	Kerosene
22	Under ISO standard 3941 (used mostly in Europe), a fire involving a flammable solid fuel would be classed as which of the following?		Class A.	Class B.	Class C.	Class D.
23	What does A.F.F.F. stand for in relation to fire fighting?		Anti Fire Frothing Foam.	Aqueous Film Forming Foam.	Active Fire Finishing Foam.	Aqueous Fire Fighting Foam
24	Which of the following types of breathing apparatus are most likely to be found onboard a modern ship?		Oxygen Breathing Apparatus.	Atmospheric Breathing Apparatus.	Gas Mask type Breathing Apparatus.	Compressed Air Breathing Apparatus.
25	Which of these extinguishers would not be very effective against a Class A fire?		Dry Chemical.	Water.	Foam.	A.F.F.F.
26	What fixed and portable fire extinguishers are often found on gas tankers, because they are considered to be most effective with burning gas?		CO_2.	Water.	Foam.	Dry Powder - Dry Chemical.
27	What is a Class B fire?		A fire involving gases.	A fire involving liquids or liquefied solids.	A fire involving solid materials.	A fire involving metals.
28	What information is found on a ship's fire plan?		The action to take if you heard the fire alarm.	The duties of each crew member in case of fire	The locations of various fire fighting appliances and equipment.	The signal used on the ship to indicate there is a fire.
29	What type of release is allowed for fixed gas fire extinguishing installations onboard?		A manually operated release only.	An automatic release system activated by fire detectors.	An automatic release system activated by fire alarms.	Any automatic release system.
30	Which fixed fire extinguishing medium is most commonly found in machinery spaces like the engine room?		Water sprinkler system.	Carbon Dioxide (CO_2).	Dry powder.	High expansion foam.
31	You are night duty officer on a ship under way when a fire in the crew accommodation is reported. What is the first action you would take?		Call the captain.	Send the duty seaman down to inspect and report the situation.	Sound the fire / general alarm signal.	Run to the scene and fight the fire.
32	Which fire fighting system is the most efficient and with least side effects in the event of a fire in the engine room?		The central foam extinguishing system.	The sprinkler extinguishing system.	The central CO_2 extinguishing system.	The powder extinguishing system.
33	What is the maximum allowed suction head for the fire pump?		4.5 metres.	1.5 metres.	3 metres.	9 metres.
34	Cargo pump rooms shall be provided with a fixed fire extinguishing system. Which of the following systems is not in accordance with the present SOLAS regulations?		Fixed gas fire extinguishing system.	Fixed powder fire extinguishing system.	High expansion foam extinguishing system.	Water spraying extinguishing system.
35	What type of fire hose nozzles must be available on board?		Jet type.	Spray type.	Dual purpose (jet/spray type).	Dual purpose (jet/spray) type incorporating shutoff.

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36	According to SOLAS - the number and position of hydrants shall be such that....		at least three jets of water not emanating from the same hydrant, one of which from a single length of hose may reach any part of the ship .	at least two jets of water not emanating from the same hydrant, one of which, from a single length of hose, may reach any part of the ship.	at least one jet of water shall reach any part of the ship that is normally accessible by the crew.	at least two jets of water shall reach any part of the ship.
37	What should first be done before the central gas extinguishing system is used on a fire in the engine room or cargo holds?		Stop all fans and engines.	Close down boilers.	Make sure that the compartment has been evacuated.	Close all openings.
38	What manoeuvre should be carry out in the event of a fire onboard?		Continue on course and speed.	Reduce speed and if possible, keep the fire zone to the leeward of the ship.	Keep the stem up against the wind.	Let the ship follow the wind.
39	What do the words "spontaneously combustible" mean?		When the substance burns it becomes very hot.	The substance is very difficult to set alight, even when it is very hot.	The substance can catch fire by itself without an external source of heat or ignition.	When this substance burns it burns completely and does not leave any residue or ash.
40	The first task of command and control is to provide the three C's of naval strategy. These three processes must be established quickly. Which process does NOT belong?		Communication.	Co-ordination.	Chaos.	Control.
41	On mustering, the leader of each party must first of all:		report to the bridge.	appoint an assistant.	take a roll call.	determine the incident site.
42	What is a good way to describe a ship when fighting a fire on board?		Potentially a six-sided box with four sides and a top and bottom through which fire can spread.	A floating hazard where the possibility of explosion must be considered.	A vessel divided by fire-proof bulkheads in such a way that fire will be contained to distinct and pre-determined fire zones.	An independent unit where outside assistance can never be provided.
43	What would you expect a ship's "fireman's outfit" to consist of?		The officer in charge, a Petty Officer and sufficient ratings to effectively handle two fire-hoses simultaneously.	Personal Equipment (such as protective clothing, boots/gloves, rigid helmet, safety lamp, axe) and Breathing Apparatus with fireproof lifeline.	The emergency escape route from the Engine Room.	Whatever specialised "personal protective clothing" for fire fighting a company decides to supply to each vessel.
44	When the BA team has withdrawn, what action should be taken by the team leader?		Instruct the BA wearers to change the bottles, then relax until called again if necessary.	Check the equipment personally and ensure that it is safe for future use.	Thoroughly de-brief the BA team and pass the information to the bridge.	Make a note, act as you think best, and keep information to yourself as others, such as the bridge team, must not be overloaded with information.

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45	What is the most reliable means of locating the "Seat of the Fire"?		Using smoke to trace the seat of the fire is the most effective means.	By letting the fire develop in the early stages, the source will soon become apparent.	The most reliable clues are detection of heat and flames.	Boundary inspections.
46	What is the first duty of an emergency party's group leader?		Waste no time and tackle the emergency. For instance in case of fire, extinguish it, then report to the bridge.	To muster his/her group at the pre-arranged muster station and check that all are safe, and to report.	Proceed straight to the problem site and await the arrival of his/her emergency party.	Check the emergency equipment under his/her control.
47	Is it good practice to send one man into a smoke filled area wearing the Breathing Apparatus (BA) while a second person remains outside the area on stand-by?		It is a rule that when only two BA sets are available on board, one man entry is essential with the second man on stand-by.	It is preferable that BA should be used in teams of not less than two fire fighters working together.	Never send two persons together into an area in case an explosion injures both persons.	There are no preferred methods of working with BA sets.
48	Complete the following sentence. Drills should always be taken...		light heartedly so as not to stress the emergency parties.	seriously and include everyone, and be interesting and meaningful.	during daylight hours only.	at long intervals to ensure that the crews don't get tired of the exercises.
49	Can you leave the control of the BA set to the wearer alone?		Yes, the wearer is best placed to know what is happening under given conditions and control must be left to them.	All that is needed is for the wearer to be trained and understand how to read the gauge.	There should be a person assigned to check donning, testing procedure, life-line tending and elapsed time.	Such controls are not practical during actual emergency situations, but are helpful during training sessions.
50	There are various methods available to extinguish a fire by removing one of the elements of the fire triangle. Removal of potential fuel is called....		cooling	flame inhibition	fuel starvation	smothering
51	The ship's fire fighting installation should provide sufficient power for water jets to reach any part of the vessel normally accessible to the crew. How many jets should it cope with?		one	two	three	four
52	Most hydrocarbons have vapours which are heavier than air. Which gas commonly found on gas carriers is an exception to this rule?		Butane	Propane	Methane	Ethane
53	What do we call the temperature at which a material produces enough flammable vapour for it to flash if exposed to an ignition source?		The auto-ignition temperature	The melting point	The flashpoint	The ignition temperature
54	Once the fire is contained, the master needs to evaluate the best strategy for the next stage. This might include a number of actions. In your opinion which action does NOT belong?		Keeping the fire contained	The use of fixed installations to put it out	Re-introducing air circulation by opening up fire dampers and other openings	Other means of control

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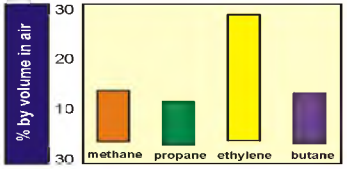
55	What is the best strategy for the master to follow after receiving the initial information of a fire on board?		To call an urgent meeting of senior officers to discuss a comprehensive plan of attack	Immediate response and rapid attack by the emergency party	To put the engineers on stand-by with orders to run the fire pumps, emergency pump, and other vital auxiliary engine room facilities	To prepare the ship's hospital for treatment of casualties
56	Ideally the adjustable jet/spray nozzle on a hose should be used as...		a jet	a spray of arc 30 degrees	a spray of arc 60 degrees	a spray of arc 90 degrees
57	Heat will always travel from hotter areas to cooler ones. When welding, for example, the heat is transferred directly through the metal. What is this process is known as?		Convection	Radiation	Conduction	Spot
58	In fire-fighting, what does the term "boundary starvation" refer to?		Closing doors and hatches at the boundary of a fire	Cooling the area around a fire to stop it spreading	Removing the fuel from the boundary of a fire to stop it spreading further	Mustering fire fighters and materials in the area near the fire
59	What action should be taken immediately after a fire has been extinguished?		Hold a de-briefing of the incident with all officers and fire fighters present	Establish a continuous watch at the fire area against re-ignition and remove any smouldering material	Report the incident to the vessel operator and flag state authorities	Write a non-conformance report in compliance with chapter 9 of the International Safety Management Code
60	When the BA team has withdrawn from a fire incident, what action should be taken by the team leader?		Instruct the BA wearers to change the bottles, then relax until called again if necessary.	Check the equipment personally and ensure that it is safe for future use.	Thoroughly de-brief the BA team and pass the information to the bridge.	Make a note, act as you think best, and keep information to yourself as others, such as the bridge team, must not be overloaded with information.
61	In the event of fire on board, what do you think is the primary consideration of the master?		To follow instructions as given in the emergency response manual	The safety of the crew	To liaise with the head office and shore authorities	To save the ship
62	Look at the diagram (Chemistry of Liquefied Gases) and say which gas has the widest flammable range.		methane	propane	ethylene	butane
63	For fighting metal fires you should use...		water	special dry powder	foam	CO_2
64	If there is an isolated fire on the poop deck, where should the master take control from?		The incident site	The ship's office	The emergency headquarters	The bridge

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ADVANCED FIRE FIGHTING	
ANSWERS	
1	A
2	D
3	B
4	D
5	C
6	B
7	A
8	C
9	C
10	C
11	B
12	B
13	D
14	B
15	B
16	D
17	C
18	C
19	B
20	D
21	D
22	A
23	B
24	D
25	A
26	D
27	B
28	C
29	A
30	B
31	C
32	C

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ADVANCED FIRE FIGHTING	
ANSWERS	
33	A
34	B
35	D
36	B
37	C
38	B
39	C
40	C
41	C
42	A
43	B
44	C
45	C
46	B
47	B
48	B
49	C
50	C
51	B
52	C
53	C
54	C
55	B
56	C
57	C
58	C
59	B
60	C
61	B
62	C
63	B
64	D