

OIC - EW: COMPETENCE 9

Maintenance and Repair of Shipboard Machinery and Equipment

1	Excessive lube oil consumption can result from worn or broken:			
	piston rings	valve guides	valve seals	all of the above
2	If the main propulsion diesel governor works irregularly with a jerking motion, a possible cause can be:			
	A sticking fuel control linkage	95 degrees Celsius	excessive pressure in the seawater feed heater	A constant quantity regulating valve
3	If your vessel burns 4 tons of fuel per hour at 21 knots, how many tons per hour will it burn at 16 knots?			
	3.0 tons	5.3 tons	2.3 tons	1.8 tons
4	It is the amount of heat released by a substance during complete combustion of unit of mass of that said substance:			
	enthalpy value	thermal value	calorific value	entropy value
5	It is the tendency of a material to suddenly break with little or no prior deformation:			
	Brittleness	Strength	Toughness	Malleability
6	Persistent knocking in one cylinder of an eight cylinder diesel engine would MOST likely be caused by.			
	using fuel oil with low cetane number	a badly worn piston pin	a loose flywheel key	a loose bed plate bolt
7	Tapping threads into a blind hole should be finished by using a:			
	short tap	taper tap	plug tap	bottoming tap
8	When inspecting piston rings through the ports of a two- stroke/cycle diesel engine, what indicates black areas on the sealing surfaces.			
	Blow-by	improper piston cooling	The intake valve opening is advanced and the exhaust valve closing is retarded.	insufficient lubrication

9	Which of the following problems is the main source of fuel pump and injection system malfunctions?			
	Improper lubrication	Air in the fuel system	Coated fuel lines	Excessive vibration
10	Why is it necessary to have a relief valve protect the deaerating feed tank from internal pressure?			
	Because the tank receives auxiliary exhaust.	Because the tank receives high pressure drains.	Because the tank receives large amounts of water.	Because the tank drains to the main condenser.
11	A diesel engine exposed to widely varying ambient temperatures should use a lubricating oil with:			
	a high viscosity index	a low viscosity index	extreme pressure additives	no additives
12	A roller bearing should normally be filled to what fraction of its space cavity?			
	Less than 1/4	1/3 to 1/2	1/2 to 3/4	More than 3/4
13	A wrench that completely surrounds a nut, or bolt head is a/an:			
	adjustable wrench	open end wrench	tappet wrench	box wrench
14	Air leaks through the inner or outer casing of a boiler could result in:			
	high superheater outlet temperature	low superheater outlet temperature	higher fuel consumption for normal steaming conditions	all of the above
15	Babbitt is a metal alloy commonly used for lining:			
	bearings	cylinder liners	bearing journals	saltwater piping
16	Before doing any work on a hydraulic system equipped with accumulators, you should:			
	bleed off all stored energy from the accumulators	drain the accumulators and purge with oxygen	completely charge the accumulators to prevent system energy loss	pump the hydraulic fluid into the accumulators to prevent fluid loss

17	Boiler tube failures can result from:			
	corrosion	overheating	mechanical stress	all of the above
18	If a centrifugal pump vibrates and is noisy when operating, the cause could be:			
	reversed pump coupling	worn gland sealing shaft	worn wearing rings	a bent shaft
19	If your ship burns 5 tons of fuel per hour at 23 knots, how many tons per hour will it burn at 18 knots?			
	1.9 tons	2.4 tons	3.1 tons	3.3 tons
20	If your ship burns 8 tons of fuel per hour at 15 knots, how many tons per hour will it burn at 20 knots?			
	19.0 tons	21.7 tons	22.4 tons	27.0 tons
21	If your vessel burns 8 tons of fuel per hour at 15 knots, how many tons per hour will it burn at 19 knots?			
	12.8 tons	16.3 tons	10.6 tons	10.1 tons
22	Lube oil contamination will increase due to normal wear of engine components as a result of:			
	abrasive particles	metallic oxides	corrosive acids	any or all of the above
23	The purpose of an oil mist detector in a main propulsion diesel engine is to warn of:			
	A possibility of an overheated bearing	50 hours in a 7 day period	excessive pressure in the seawater feed heater	a dirty strainer in the saltwater feed pump suction line
24	What is the theoretical lift of a pump handling fresh water at atmospheric pressure?			
	10.35 m	101.35 m	14.7 m	1.02 m
25	Which of the following listed pressures is the maximum acetylene gas pressure that can be safely used in gas welding?			
	10 psi	15 psi	25 psi	35 psi

26	A ballast pump, with a capacity of 200 gpm, takes suction on a tank containing 300 long tons of sea water ballast. How much ballast will remain in the tank after pumping for one hour?			
	45.83 long tons	91.66 long tons	183.32 long tons	254.17 long tons
27	A diesel engine is warmed up and white vapor is noted in the exhaust, this could indicate:			
	excessive cylinder lubrication	a lugging engine	a leaking cylinder liner	overloading of one cylinder
28	A refrigeration system compressor crankcase is sweating or unusually cold. This is an indication of:			
	air in the system	a shortage of oil in the crankcase	a shortage of refrigerant in the system	an accumulation of liquid refrigerant in the crankcase.
29	A work piece has been mounted between centers and a test cut machined at each end to check alignment of the lathe centers. If the test cut on the tailstock end is deeper than the test cut on the headstock end, the tailstock must be moved:			
	away from you to correct alignment	toward you to correct alignment	closer to the headstock to reduce the amount of offset	away from the headstock to decrease the misalignment
30	Advances in metallurgy and improved methods of boiler tube fabrication has led to lighter tubes with wall thicknesses in the vicinity of 0.1 inches. A characteristic of these thin walled tubes is:			
	low tube metal temperatures	decreased probability of tube failure during normal operating conditions	better heat transfer characteristics	All of the options
31	An advantage of aluminum pistons, when compared to cast iron piston is:			
	greater high temperature strength	better heat conductivity	greater weight per cubic inch	increased resistance to wear
32	Bluish smoke in the exhaust of an operating diesel engine can be caused by:			
	an overheated engine	a scored cylinder liner	water leaking into a cylinder	low combustion temperature
33	Diesel engine piston seizure can be caused by.			
	poor cooling of cylinder walls	improper cooling of the piston	insufficient piston lubrication	all of the above

34	Fuel oil day tanks for diesel engines must be checked and cleaned at regular intervals in order to remove.			
	sludge	water	micro-organism growth	all of the above
35	How many BTUs must be added to one pound of water at 32°F to raise the temperature to 212°F?			
	16 BTU's	144 BTU's	180 BTU's	970 BTU's
36	If a stateroom has a 6" by 12" opening through which air travels at 100 feet per minute, what is the volume of air being supplied to the stateroom?			
	36 cu ft/min	50 cu ft/min	72 cu ft/min	100 cu ft/min
37	If your ship burns 3 tons of fuel per hour at 19 knots, how many tons per hour will it burn at 15 knots?			
	1.5 tons	1.9 tons	2.4 tons	5.3 tons
38	If your ship burns 8 tons of fuel per hour at 15 knots, how many tons per hour will it burn at 18 knots?			
	13.8 tons	11.5 tons	10.7 tons	9.5 tons
39	If your ship burns 8 tons of fuel per hour at 15 knots, how many tons per hour will it burn at 19 knots?			
	10.1 tons	12.8 tons	16.3 tons	19.1 tons
40	If your ship burns 8 tons of fuel per hour at 15 knots, how many tons per hour will it burn at 21 knots?			
	20.3 tons	22.0 tons	26.1 tons	29.4 tons
41	If your ship burns 8 tons of fuel per hour at 15 knots, how many tons per hour will it burn at 22 knots?			
	11.7 tons	14.2 tons	17.2 tons	25.2 tons
42	If your vessel burns 6 tons of fuel per hour at 22 knots, how many tons per hour will it burn at 17 knots?			
	4.6 tons	3.9 tons	2.8 tons	1.7 tons

43	In the case of a variable speed centrifugal pump:			
	capacity varies directly as the speed	capacity varies as the diameter	head varies as the square of the diameter	power varies as the cube of the diameter
44	It is the physical or chemical property of the fuel or diesel oil which contain the amount of heat released by the combustion of a mass of fuel?			
	Specific gravity	Pour point	Calorific value	Flash point
45	Leakage over the ends of the blade tips, as a result of the pressure differential between each row of blades in a reaction turbine, can be reduced with a blade design known as.			
	thin tipping	end-tightening	seal stripping	Any of the above
46	Prior to relieving the watch you should first check the fire room status by verifying the boiler water level and:			
	prepare to blow tubes	economizer inlet temperature	boiler steam pressure	port and starboard settling tanks
47	Safety valve gags should only be installed hand tight in order to prevent:			
	compression of the valve spring	bending of the valve stem	damage to the gag	over pressurizing the valve body
48	The best type of chisel to use for cutting a keyway is the:			
	round nose chisel	flat cold chisel	diamond point chisel	cape chisel
49	To obtain a 1/2 inch per foot taper on an 18 inch work piece, the tailstock of the lathe must be set over:			
	3/8 inch	1/2 inch	3/4 inch	7/8 inch
50	What could be the possible cause why a diesel generator engine freely turns over but fails to ignite properly?			
	Air in the fuel line	Cold lube oil	Water in the starting air system	Late fuel injection
51	Which of the files listed will have coarsely spaced teeth?			
	Second cut	Dead smooth cut	Bastard cut	Smooth cut

52	Which of the listed metals can usually be drilled without lubrication?			
	Tungsten	Steel	Monel	Brass
53	Which of the wrenches listed is least likely to slip off a bolt head or nut?			
	Open end wrench	Box end wrench	Crescent wrench	Spanner wrench
54	Hydraulic pumps most commonly used in steering systems are of the:			
	volute type	axial piston type	lobe type	screw type

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