

OIC - EW: COMPETENCE 8

Appropriate Use of Hand Tools, Machine Tools and Measuring Instruments for Fabrication and Repair on Board

1	An increase in the pressure drop between the inlet and outlet of the feed water heater waterside, not due to a waterside obstruction, would indicate:			
	insufficient water velocity through the heater	water flow rate higher than feed water heater design limits	fouling of the heater steam side	an accumulation of noncondensable gases in the steam circuit
2	Ferrous metals are metals containing:			
	a large percentage of copper	a large percentage of aluminum	a large percentage of iron	no iron
3	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
4	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
5	In terms of linear measurement, approximately how many "inches" equal one "meter"?			
	29.4	39.4	49.4	59.4
6	The blade for a power hacksaw should be installed with the teeth:			
	pointing either toward or away from the motor end of the machine	pointing away from the motor end of the machine	pointing toward the motor if using a 4 or 6 tooth blade and	pointing either toward or away from the motor end of the machine
7	The seat of a butterfly valve will most likely be constructed of:			
	Monel	Satellite	A resident material	Admiralty metal

8	Tubing is sized by:			
	nominal outside diameter	allowed working pressure	nominal inside diameter	cross-section area
9	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
10	When knurling a piece of work on a lathe, it is important to:			
	operate the lathe at the slowest speed	use plenty of oil	mount the knurling tool securely in the tool post	all of the above
11	When using a hand held hacksaw the correct maximum rate of speed for cutting should be:			
	10 to 20 strokes per minute	80 to 100 strokes per minute	40 to 50 strokes per minute	70 to 80 strokes per minute
12	Which drill size would you use to machine and tap a 3/4 -10 National Coarse internal thread?			
	27/64 inches	31/64 inches	21/32 inches	25/32 inches
13	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
14	Which of the listed tools should be used to remove a tapered roller bearing from a shaft?			
	An arbor press	A steel drift pin and hammer	An acetylene torch and hammer	A tapered „come-a-long“
15	Which practices should be followed at all times when using an electric bench grinding machine?			
	Wear goggles or face shield.	Replace grinding wheels that are chipped or unbalanced.	Keep the support rest clearance properly adjusted to the wheel.	All of the above

16	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 F3 – 2 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
17	A reading of 0.250 on a micrometer with a 1 to 2 inch range is equal to:			
	1/4 inch	1/2 inch	1 1/4 inches	2 1/4 inches
18	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
19	A wear resulting from the grinding action of abrasive contaminants on the oil:			
	Corrosive	Adhesive	Cohesive	Abrasive
20	An 8" diameter wheel is driving a 20" diameter wheel via a pair of belts The power input is supplied by a 5 HP motor rotating the driving wheel at 300 RPM. If the efficiency of the supplied by a 5 HP motor rotating the driving wheel at 300 RPM. If the efficiency of the transmission is 80%, what RPM and torque is delivered to the driven wheel.			
	120 RPM at 4 HP	160 RPM at 4 HP	220 RPM at 4.5 HP	220 RPM at 4.8 HP
21	Be in accordance with the engine load and the same quantity of fuel must be delivered to each cylinder for each power stroke at that load. Which of the following statements describes this requirement?			
	Accurate metering	An orifice	excessive pressure in the seawater feed heater	A worn or damaged stern tube seal
22	Boiler tube failures can result from:			
	corrosion	Overheating	mechanical stress	all of the above
23	For mild steel and general work, the correct angle of a drill point is _____degrees.			
	118	119	120	121

24	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
25	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
26	If the thimble of a micrometer were turned through one complete revolution, the micrometer would open or close by a linear distance of:			
	001 inch	010 inch	025 inch	100 inch
27	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
28	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
29	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
30	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
31	The chemical analysis of an oil sample taken from the main propulsion machinery indicates a report of an increase neutralization number, you should be aware that:			
	acidity has increase	viscosity has increased	demulsibility has improved	foaming is certain to occur
32	The open end wrench size for a 3/4 inch American National Standard hex head machine bolt is:			
	3/4 inch	7/8 inch	1 1/4 inches	1 1/2 inches

33	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
34	The welding symbol reference line using the inverted "V", indicates:			
	a "V" groove weld is to be made	the arrow side of the weld is to be surface finished	the opposite side of the weld is to be surface	a "V" groove weld is to be made
35	To prevent vibration damage to the fuel supply line of a diesel engine, you may use:			
	a short length of heavy duty clear plastic tubing	a length of approved flexible nonmetallic hose	welded flange connections for all joints	aluminum piping with expansion loops
36	When working around deck machinery it is a good safety practice to avoid standing in a „bright“ of a rope because:			
	a sudden yank on the line may trap your	it doesn't allow for proper faking of the line	the coil may become tangled and difficult to manage	your work shoes may cause damage to the rope
37	Which of the files listed can be used for sharpening a tool?			
	A triple cut file.	A single cut file.	Any bastard cut file.	Only a double bastard cut file.
38	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
39	Which of the listed metals can usually be drilled without lubrication?			
	Tungsten	Steel	Monel	Brass
40	Which pipe listed has the largest outside diameter?			
	A 3/4" pipe with a standard wall thickness.	A 3/4" pipe with an extra strong wall thickness.	A 3/4" pipe with a double extra strong wall thickness.	All have the same outside diameter.

41	A "thirty pound" steel plate would be:			
	3/8" thick	1/2" thick	3/4" thick	1" thick
42	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
43	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
44	A micrometer screw has a pitch of:			
	40 threads per inch	50 threads per inch	75 threads per inch	100 threads per inch
45	A piece of tapered round stock 36 inches long, 4 inches in diameter at the large end and 2 1/2 inches in diameter at the small end. What tailstock set over was used to machine the taper?			
	0.375 inch	0.750 inch	1.500 inch	2.500 inch
46	A reading of 0.625 inch on a micrometer with a 2 to 3 inch range would be equal to:			
	2 5/8 inches	2 7/16 inches	3 1/8 inches	3 9/16 inches
47	A ship travels 5472 miles in 26 days 12 hours and 24 minutes. Find the average speed for the engine voyage.			
	8.74 knots	8.60 knots	8.63 knots	8.68 knots
48	A wrench that completely surrounds a nut, or bolt head is a/an:			
	adjustable wrench	open end wrench	tappet wrench	box wrench

49	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
50	An eight cylinder, four stroke/cycle, single acting diesel engine has a 650 mm bore and a 1400 mm stroke. What will be the developed indicated metric horsepower if the average mean effective pressure is 30 kg/cm ² at a speed of 100 RPM?			
	1689 kW	9,111 kW	12,388 kW	24,776 kW
51	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
52	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
53	For cutting thin tubing or sheet metal, the proper hacksaw blade should have:			
	the teeth pointing towards the handle	the blade and teeth of „all-hard“ quality	14 teeth per inch	32 teeth per inch
54	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
55	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
56	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

57	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
58	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
59	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
60	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
61	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
62	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
63	Safety valve gags should only be installed hand tight in order to prevent:			
	compression of the valve spring	bending of the valve stem	mage to the gag	overpressurizing the valve body
64	Tapping threads into a blind hole should be finished by using a:			
	short tap	taper tap	plug tap	bottoming tap
65	The characteristic of a good quality lubricating oil for use in any machinery should be:			
	acid free	capable of emulsifying	rapid oxidizer	additive free

66	The number of screw threads per inch for a Standard National Coarse 1/2 inch bolt is:			
	13	16	18	20
67	The open-end wrench size for a standard 3/4 inch American National hex head bolt is:			
	10/24 inch	3/4 inch	1 1/4 inches	1 1/2 inches
68	The steam coils in a high pressure evaporator used for saltwater service should be descaled with:			
	a wire brush	a needle gun	a chipping hammer	soap and water
69	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
70	When welding or burning with an oxygen-acetylene working pressure must not:			
	1 kg/cm ²	0.25 kg/cm ²	0.50 kg/cm ²	2 kg/cm ²
71	Which material can be drilled at the highest speed?			
	Aluminum	Medium cast iron	Copper	High carbon steel
72	Which of the files listed will have coarsely spaced teeth?			
	Second cut	Dead smooth cut	Bastard cut	Smooth cut
73	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
74	Which of the following problems may occur if the clearance between a piston and cylinder liner is insufficient?			
	Excessive wear	Scuffing of the liner	Piston seizure	All of the above

75	Which of the listed devices could be used as a ring groove cleaning tool during preparation for the installation of new rings if a piston ring cleaning tool was not available?			
	Steel brush	Fine emery cloth or steel wool	A section of the removed compression ring	A case hardened scraper
76	Which of the listed numeric values represents the smallest size drill?			
	#0	#1	#60	#80
77	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

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