

Steam Plants II

ID #	Question	Choice A	Choice B	Choice C	Choice D
1	A back pressure trip on a ship's service turbo-generator functions to trip the turbine under what circumstance?	lubricating oil pressure is too low	amount of cooling water to the condenser is excessive	gland seal leakoff pressure is too high	amount of cooling water to the condenser is insufficient
2	A back pressure trip on an auxiliary turbo generator functions to secure the device if the _____.	oil pressure is too low	discharge pressure of a turbine driven pump is excessive	gland seal leakoff pressure is too high	exhaust pressure rises above a preset limit
3	A bridge gage is normally used to determine turbine _____.	bearing oil clearance	diaphragm tip clearance	blade axial clearance	bearing wear
4	A bridge gage is used to measure _____.	blade tip leakage	rotor bearing wear	axial clearances	thrust bearing wear
5	A centrifugal oil purifier should be shut down if the _____.	presence of oil is indicated in the gravity tank bull's-eye	observation cover clamp needs tightening	purifier is vibrating badly	trapped water is discharged from the overflow line
6	A centrifuge should satisfactorily remove which of the listed substances from lube oil?	Fuel oil	Gasoline	Water	Diesel fuel
7	A centrifuge will satisfactorily remove which of the listed substances from lube oil?	Diesel fuel	Gasoline	Fuel oil	Carbon particles
8	A cloudy or milky appearing lube oil sample, taken from the main lubricating oil system could be caused by _____.	insufficient cooling water to the lube oil cooler	excessive cooling water to the lube oil cooler	insufficient gland sealing steam	excessive gland sealing steam
9	A common cause of the babbitt linings cracking in a turbine journal bearing is from _____.	prolonged operation at low speed	prolonged operation at full speed	vibration generated by the rotor	excessive thrust bearing wear
10	A common method of preheating main turbine lube oil prior to rolling over the main unit would be to _____.	run both the lube oil pumps simultaneously	operate the lube oil purifier on the main lube oil sump	slightly increase gland sealing steam pressure	bypass the lube oil gravity tank
11	A constant speed hydraulic governor would more than likely be installed on a _____.	turbo generator	main propulsion turbine	main feed pump	main condensate pump
12	A convergent-divergent nozzle functions to _____.	reverse steam flow direction	control turbulent steam expansion	decrease steam velocity and increase steam pressure	decrease the specific volume of steam
13	A disk-type centrifuge is set up for continuous use on the main turbine lube oil system. In order to batch centrifuge a small quantity of diesel oil from a storage tank, _____.	the speed of the centrifuge must be increased	another centrifuge should be used to avoid the possibility of contaminating the main lube oil system	the number of conical disks must be increased	the feed temperature must be decreased to 170°F

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14	A gravity type lube oil system for a steam vessel will have a remote pressure sensing device installed on the main lube oil header of the main turbine unit to enable the watch engineer to _____. I. determine if there is a normal level of lube oil in the gravity tank II. be certain that the bearings are being adequately lubricated	I only	II only	Both I and II	Neither I nor II
15	A Kingsbury, or pivot shoe type thrust bearing, can bear much greater loads per square inch of working surface than can parallel surface bearings because provisions are made in the Kingsbury bearing _____.	for adjusting the filler piece thickness behind the pivotal-shoes to give a more accurate fit	for automatically adjusting clearances to the correct value when wear occurs	for the shoes to tilt slightly, thereby allowing the formation of a wedge shaped oil film under a thrust load	to allow the leveling plates to pivot on the collar when thrust loads are applied
16	A lube oil sample is taken from the main engine lube oil system and visually inspected. Which of the following would indicate water contamination?	A milky-white color	A clear, amber color	A black color	A reddish-orange color
17	A lube oil sample taken from the main engine lube oil system has a dark yellow opaque color. This is the result of _____.	water contamination	mixing oils of two widely different viscosities	overheating	aeration
18	A motor driven synchronizing device, figure "D" shown in the illustration, operated from the generator switchboard, initiates fine adjustments to the steam turbine speed by directly _____.	raising or lowering the nozzle block lifting beam	changing the vertical location of the pilot valve bushing	increasing or decreasing operating spring pressure	varying the pivot rod stroke length on the governor weight eccentric pad
19	A nozzle in an impulse turbine functions to _____.	reverse steam flow direction	guide the steam through the fixed blades	convert the steam's thermal energy to kinetic energy	convert the steam's kinetic energy to thermal energy
20	A pilot valve and servomotor are utilized in mechanical-hydraulic governing systems on a turbo generator unit in order to _____.	provide sufficient force to operate large steam lifting beam control valves	provide a means of maintaining constant output voltage	allow parallel operation with zero speed droop	constant load on the turbine unit
21	A poorly cleaned lube oil purifier bowl may result in _____.	insufficient oil supply to the gravity tank	improper separation	excessive lube oil consumption	excessive water discharge rate
22	A power failure in the hydraulic system of a compact type steering gear would cause the rudder to _____.	swing 35° right or left	remain locked in its last position	move to the midship position automatically	jam against the rudder emergency stops

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23	A pressure drop occurs across both the moving and fixed blades of a reaction turbine as a result of the _____.	reversing blades causing a velocity drop with resultant pressure drop	conversion of the thermal energy to pressure energy always resulting in a pressure drop	interstage diaphragms creating a nozzle effect in the steam flow	moving and fixed blades being shaped to act as nozzles
24	A pressure-velocity compounded impulse turbine consists of _____.	velocity compounding with reaction pressure compounding	several rows of moving blades attached to diaphragms	two or more stages of velocity compounding	two or more rows of nozzles in which no pressure drop exists
25	A rotor position micrometer on a main propulsion reaction turbine measures rotor _____.	radial position relative to the casing	radial position relative to the micrometer	axial position relative to the casing	axial position relative to the micrometer
26	A sequential lift, nozzle valve control bar on a turbo generator, utilizes which of the following operating principles?	A lifting beam mechanism engages nozzle valve stems of varying lengths.	A hydraulic piston raises or lowers groups of valves according to pressure received from a governor.	A hydraulic piston raises or lowers individual valves according to pressure received from a governor.	A servomotor, mechanically connected to nozzle valve hand wheels, opens or closes the valves in accordance with the type of electrical signal received.
27	A ship is equipped with the illustrated turbine gear set and a right hand turning propeller. When steam is admitted to the astern element, with sternway on, the high-speed gear on the high pressure side is _____.	rotating the same direction as the low-speed pinion on the low pressure side.	turning the same rotation of the high-speed pinion on the low pressure side.	turning opposite to the rotation of the high-speed gear on the low pressure side.	turning counter clockwise as viewed from the aft end of the reduction gear.
28	A ship is equipped with the illustrated turbine gear set and a right hand turning propeller. When steam is admitted to the astern element, with sternway on, the high-speed gear on the high pressure side is _____.	rotating in the opposite direction as the low-speed pinion on the low pressure side as viewed from the aft end of the reduction gear.	turning clockwise as viewed from the forward end of the reduction gear.	turning opposite to the rotation of the high-speed gear on the low pressure side.	turning clockwise as viewed from the aft end of the reduction gear.
29	A ship is equipped with the illustrated turbine gear set and a right hand turning propeller. When steam is admitted to the astern element, with sternway on, the high-speed pinion on the high pressure side is _____.	rotating in the same direction as the low-speed pinion on the low pressure side.	turning counter clockwise as viewed from the aft end of the reduction gear.	turning the same direction as the high-speed gear on the low pressure side.	turning the opposite direction as the low speed reduction gear.
30	A steam driven 750 KW turbo generator has a rated speed of 1200 RPM. The overspeed setting for this unit must not exceed _____.	1320 RPM	1380 RPM	1440 RPM	1500 RPM

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31	A steam propelled tank ship is operating at sea and despite troubleshooting the system by all the vessel's engineers, the transfer of fuel to the settler has not been possible and the settler will be empty in a few minutes. As the watch engineer, your NEXT step should be to _____.	repeat all the steps that have been taken to determine the cause of the problem	call out other engineers for assistance	line up the diesel cold start system	stop the main engine and secure the generator
32	A steam vessel is operating at sea and despite troubleshooting the system by all the vessel's engineers, the transfer of fuel to the settler has not been possible and the settler will be empty in a few minutes. As the watch engineer, your NEXT step should be to _____.	activate the "engineer needs assistance" alarm	line up the diesel cold start system	warm up the emergency generator	repeat all the steps that have been taken to determine the cause of the problem
33	A turbine assembly in which steam flows in series through a high pressure turbine and then on to a low pressure turbine, with both turbines driving a common reduction gear through separate shafts, is classified as _____.	dual series	cross-compound	tandem-compound	tandem, double flow
34	A turbine diaphragm functions to _____.	support moving blades and shrouding in an impulse turbine	provide support for interstage packing in a reaction turbine	support the nozzles and direct the flow of steam in an impulse turbine	decrease steam velocity in the nozzles of an impulse turbine
35	A turbo generator back pressure trip can be actuated as a result of _____.	insufficient circulating water flow through the condenser	a steam inlet valve being partially open	an excessive pressure drop through the turbine	excessively low exhaust pressure
36	A turbo-generator governing system maintains constant turbine speed by using a flyweight-actuated pilot valve to control hydraulic oil flow to a lifting beam operating cylinder, which in turn, _____.	changes the position of the turbine throttle valve	controls the opening or closing of turbine nozzle valves in the steam chest	controls the steam pressure in the steam chest	regulates steam back pressure
37	According to illustration SE-0019, piston "F" in the gland seal regulator is moved upward by _____.	steam pressure	control air	lube oil pressure	nitrogen
38	According to the illustration (SE-0019), bellows "I" in the gland seal regulator is actuated by _____.	gland seal steam pressure	control air pressure	lube oil pressure	steam throttle pressure
39	According to the illustration, what is the normal function of the component shown?	act as a final filter for oil entering a bearing	indicate the temperature and flow of lube oil leaving a turbine bearing	indicate the pressure and flow of lube oil entering a turbine bearing	indicate the pressure and temperature of lube oil leaving a turbine bearing

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40	After one year of operating the bearing shown in the illustration, the reading obtained at point "A" would always be equal to the _____.	reading stamped on the gage only	designed oil clearance	designed oil clearance plus the stamped bridge gage reading	stamped bridge gage reading plus the bearing wear
41	After properly lining up the main propulsion turbine for warm up, steam should first be admitted to the rotor through the _____.	ahead throttle valve	astern throttle valve	HP turbine bleed valve	LP turbine bleed valve
42	After setting the allowable end play of the thrust bearing shown, you would establish the axial position of the turbine shaft by _____.	increasing the thickness of the adjusting ring	decreasing the thickness of the adjusting ring	changing the thickness of the thrust collar	changing the thickness of the filler piece
43	After starting the main lube oil pump in a gravity-type lube oil system, you should verify that the gravity tanks are full by _____.	looking at the overflow sight glass	sounding the gravity tanks	sounding the lube oil sump	observing the flow from the bearings
44	After starting the main lube oil pump in a gravity-type lube oil system, you should verify that the gravity tanks are full by _____.	observing the overflow sight glass	sounding the gravity tanks	sounding the lube oil sump	observing the flow from the bearings
45	After the housing has been bolted down, the final check of reduction gear tooth contact is usually made by _____.	alignment gauges	dial indicators	bluing the teeth	bridge gauges
46	Air trapped in the hydraulic fluid of a steering system would be indicated by _____.	the pump overspeeding	erratic rudder response	bubbles in the sight glass	ram relief valves lifting
47	Air trapped in the hydraulic fluid of a steering system would be indicated by _____.	an improper rudder response	hammering noises in the equipment or transmission lines	popping or sputtering noises	all the above
48	Allowance for axial expansion of the steam turbine due to temperature changes is provided for by the use of _____.	casing flexible joints	rotor position indicators	a deep flexible I beam support	pivoted-shoe type thrust bearings
49	An air vent is installed on some reduction gear casings to _____.	avoid the accumulation of flammable oil vapors	release air pressure buildup	admit cooling air to the gearing	decrease the possibility of corrosion
50	An auxiliary turbine boiler feed pump should normally be stopped by _____.	closing the exhaust valve slightly	actuating the throttle hand tripping device	rotating the hand lube oil pump backwards	increasing the load on the driven unit
51	An efficient seal is normally obtained between the upper and lower halves of a turbine casing by _____.	precision metal-to-metal contact	copper gaskets	asbestos gaskets	flexible steel seal strips
52	An energy loss associated with a reaction turbine, but not an impulse turbine, is _____.	throttling loss	windage loss	tip leakage loss	leaving loss
53	An excess pressure governor is a special type of control device which would normally be found on a _____.	main circulator pump	turbine-driven feed pump	low pressure propulsion turbine	forced draft fan
54	An excess pressure governor would normally be used on a _____.	main circulator pump	turbine-driven feed pump	low pressure propulsion turbine	forced draft fan

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55	An excessive power loss in a straight reaction turbine is commonly caused by _____.	improper nozzle angle	excessive fluid friction	leaking diaphragm packing	abnormal tip leakage
56	An excessive pressure differential across a lube oil strainer could indicate _____.	the strainer needs cleaning	the filter elements are installed upside down	the relief valve is stuck open	all of the above
57	An excessively high brine level in a flash evaporator can be caused by _____.	excessive vacuum in the first effect shell	an excessive brine blow down rate	failure of the brine pump	excessive distillate pump speed
58	An impulse-reaction turbine is characterized by which of the following arrangements?	Reaction blading followed by impulse diaphragms.	Stationary nozzles with impulse blading stages.	Reaction stages followed by velocity-compounded blading.	Velocity-compounded stages followed by reaction blading.
59	An increase in clearance between reaction blade tips and the turbine casing will result in _____.	an increase in rotor thrust load	an increased pressure drop across the blades	an increase in pressure in the following stage	a decrease in pressure in the following stage
60	An increase in clearance between reaction blade tips and the turbine casing will result in _____.	an increase in rotor thrust load	an increased pressure drop across the blades	decrease in rotor torque	increase in rotor vibration
61	An intermediate chamber is used in conjunction with labyrinth packing on main turbine shaft glands to provide a _____.	pressure relief during periods of low internal vacuum	sealing steam supply during periods of low internal pressure	sealing steam flow to the throttle	suction path to the air ejectors
62	An overheated bearing in the main propulsion unit is indicated by _____.	bubbles in the sight flow glasses	sludge in the lube oil strainers	high level in the lube oil sump	high temperature of the lube oil leaving the bearing
63	An unusual vibration in the main propulsion turbine unit, accompanied by a rumbling sound in the reduction gear, could be caused by _____.	overloading of the condenser	a carryover from the boiler	a reduction in condenser vacuum	a labyrinth seal failure
64	Any abnormal condition or emergency occurring in the fire room must be immediately reported to the _____.	oiler on watch	engineer on watch	first assistant engineer	U. S. Coast Guard
65	Any abnormal condition or emergency that occurs in the engine room must be reported immediately to the _____.	first assistant engineer	fireman on watch	Chief engineer	engineer on watch
66	As found in a reduction gear drive system, thrust bearings serve to _____.	transmit the force produced by the propeller to the structure of the ship	limit the radial movement of the shaft	increase the shaft speed	hold the main engine in place
67	As indicated in the graph, what percentage of rated horsepower is being developed when operating the main propulsion turbine at 80% speed?	10%	25%	50%	80%
68	As indicated in the graph, what percentage of rated horsepower is being used to operate the main propulsion turbine at 30% speed?	1%	4%	10%	40%

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69	As lube oil absorbs moisture its dielectric strength can be expected to _____.	remain the same	decrease	increase with an increase in viscosity	increase with a decrease in viscosity
70	As shown in the illustration (SE-0019), live steam is supplied to the gland seal regulator via _____.	line "C"	line "D"	line "G"	line "A"
71	As steam first enters the main propulsion turbine, which of the following energy conversions takes place?	potential to kinetic	mechanical to thermal	chemical to thermal	thermal to chemical
72	Axial movement in a gear-type flexible coupling is provided for by _____.	flexible "I beam" construction	the variable oil clearance in the quill shaft	gear teeth on the floating member sliding between internal teeth on the shaft ring	adjusting the pitch of the teeth on the pinion and high speed gears
73	Axial movement in a gear-type flexible coupling is provided for by _____.	each gear sliding on its shaft between retaining collars	the variable oil clearance in the quill shaft	gear teeth on the floating member sliding between internal teeth on the shaft ring	adjusting the pitch of the teeth on the pinion and high speed gears
74	Babbitt is a metal alloy commonly used for lining _____.	bearings	cylinder liners	bearing journals	saltwater piping
75	Babbitt is a metal alloy commonly used for lining _____.	saltwater piping	valve seats	shim stock	precision bearings
76	Babbitt metal is used to make _____.	pump packing rings	shaft journals	bearing surfaces	non-sparking tools
77	Because of the pressure drop existing across each diaphragm, the flow of steam between the nozzle diaphragm and the rotor of the turbine is held to a minimum by _____.	a fluid seal	deflector rings	a babbitt liner	a labyrinth packing ring
78	Because the entire thrust bearing assembly is normally submerged in oil, the pivoting shoe arrangement allows the formation of a continuous wedge shaped oil film shown in the illustration by arrow "B", between the _____.	leveling plates and collar	base ring and pivoted shoes	leveling plates and buttons	collar and pivoted shoes
79	Before placing the jacking gear in operation on a main turbine unit, you must always insure that _____.	the gland seal steam system is operating	the main salt water circulating pump is operating	the condensate system is operating	the main lube oil system is operating
80	Bridge gage readings are to be taken on the bearing shown in the illustration. You would use the indicated 3 3/4"R to _____.	identify the bearing by radius	center the bearing load point	center the bridge gauge	measure the angle to bridge gauge
81	By which of the following means can rotating parts of the main reduction gear be examined?	Inspection covers	Bull's eyes or sight glasses	RT junction boxes	Tachometer drives
82	Carbon ring packing segments are secured in a shaft gland assembly of a steam turbo generator by means of _____.	garter springs	centering rings	steam pressure	labyrinth rings

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83	Cavitation is a term commonly used with centrifugal pumps to describe _____.	the formation and subsequent collapse of vapor pockets in the impeller	excessive clearances produced on the impeller wearing rings	the laminar flow of the fluid being pumped	water hammer in the pump suction line
84	Chamfers, located at the parting edges of horizontal split sleeve type bearings, are used to facilitate oil storage and distribution. They are machined _____.	radially the full length of the bearing	axially the full length of the bearing	radially, to within 45 degrees of the normal bearing surface	axially, approaching but not extending to the end of the bearing
85	Clean oil leaves the centrifuge illustrated through item _____.	K	N	V	X
86	Coast Guard Regulations (46 CFR) concerning lubricating oil systems for main propulsion turbines, require _____.	the lube oil system to function satisfactorily when the vessel has a permanent list of 25°	lube oil coolers to have three separate means of circulating water	lube oil piping to be independent of other piping systems	two standby auxiliary lube oil pumps be provided
87	Coast Guard Regulations (46 CFR), require main propulsion lube oil systems to be designed to function satisfactorily when the vessel has a permanent _____.	15° list and a permanent 5°Trim	15° list and a permanent 10°Trim	22° list and a permanent 10° trim	30° list and a permanent 10° trim
88	Concerning the classification of steam turbines, a cross compound designed unit _____.	consists of reaction stages and a dummy piston	consists of one Curtis stage and reaction blading	consists of a high pressure turbine, crossover pipe, and low pressure turbine	is made up of a varied assortment of impulse and reaction staging
89	Constant speed governors are normally employed with _____.	cruising turbines	high pressure turbines	turbo generator units	variable speed turbines
90	Design characteristics of a velocity-compounded impulse turbine include the utilization of _____.	one or more nozzles with one row of rotating blades	a single pressure stage with two or more velocity stages	a low velocity steam jet from a nozzle	two or more simple impulse stages
91	Despite troubleshooting the system, the watch engineer has been unable to transfer fuel to the settler while underway. As the settler level is becoming dangerously low, the engineer should now _____.	repeat all the steps he has taken	call out other engineers for assistance	utilize a portable rubber impeller transfer pump	secure each propulsion boiler
92	Dirt and/or metallic particles in a reduction gear lubricating oil system may cause which of the following problems to occur?	Uniform polishing of the journals.	Decrease in lube oil temperature.	Spalling of the gear teeth.	Increase in lube oil discharge pressure.
93	During a maintenance inspection of a turbo generator, the integral turbine wheels are tapped with a hammer. What condition may be indicated by a dull non-resonating sound?	Improper rotor support	Overstressed blade shrouding	A cracked turbine wheel	Normal structural solidity

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94	During a maintenance inspection of a turbo generator, the integral turbine wheels are tapped with a hammer. What condition may be indicated by a dull, non-resonating sound?	Normal structural solidity	A cracked turbine wheel	Overstressed blade shrouding	Improper rotor support
95	During an in-port watch onboard a tank vessel while cargo operations are in progress, with the jacking gear engaged and running, you notice a 200 gallon drop in the reduction gear lube oil sump level. Which components or conditions should be checked immediately?	Inspect proper line-up of lube oil service pumps.	Confirm with deck officer that there was a change in vessel trim.	Verify the correct line-up of the lube oil transfer tank gravity overflow line.	All of the above are correct.
96	During an inspection of the main turbine, you notice flow marks or discoloration across the diaphragm joints. This condition indicates _____.	normal wear for a high temperature unit	water carryover between stages	improper seating of the diaphragm joint	excessive chemical treatment of the boiler water
97	During an inspection of the main turbine, you notice flow marks or discoloration across the diaphragm joints. This condition indicates _____.	water carryover between stages	normal wear for a high temperature unit	excessive chemical treatment of the boiler water	improper seating of the diaphragm joint
98	During high speed operation of the main turbine propulsion unit, the heat absorbed by the lubricating oil is removed by the _____.	lube oil purifier	sump vents	distillate cooler	lube oil cooler
99	During maneuvering, a vessel has just proceeded from full ahead to a dead slow condition. Which of the following actions reflects the first response of the gland seal regulator shown in the illustration SE-0004?	Pilot valve "J" would move upward.	Valve "D" would open.	Bellows and connecting link would move upward.	Valve "C" would open.
100	During maneuvering, a vessel has just reached full ahead from a dead slow condition. Which of the following actions reflects the first operation of the gland seal regulator shown in the illustration?	Pilot valve bushing would move downward.	Valve "D" would move upward.	Bellows and connecting link would move upward.	Needle valve would automatically become seated.
101	During normal operation of a main propulsion turbine, the lube oil supply temperature to the bearings should be maintained at approximately _____.	60°F	72°F	110°F	135°F
102	During the operation of a lube oil centrifuge, a thin emulsion interface occurs between the lube oil and seal. The position of this interface is determined by the _____.	number of disks in the disk stack	outside diameter of the discharge ring	inside diameter of the ring dam	initial volume of seal water admitted to the bowl
103	During the routine inspection of an operating centrifugal lube oil purifier, you notice oil discharging through the water discharge port. Which of the following actions should be taken?	Do nothing as this is normal.	Add water to seal the bowl.	Increase the bowl speed to balance the water and oil discharges.	Decrease the temperature of the entering oil to lower the specific gravity.
104	Excessive priming in a propulsion boiler can cause severe damage to the _____.	integral superheater	main steam turbine	Both A and B	Neither A nor B

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105	Excessive priming in a propulsion boiler can cause severe damage to the _____. I. integral superheater II. main steam turbine	I Only	II Only	Both I and II	Neither I nor II
106	Excessive priming in a propulsion boiler can lead to severe damage of the _____. I. downcomers installed in a "D" type boiler II. main steam turbine reduction gears	I Only	II Only	Both I and II	Neither I nor II
107	Excessive thrust bearing wear in a main propulsion turbine rotor should FIRST become apparent by _____.	rubbing noises when jacking over the main unit	metal particles in the lube oil purifier	an intermittent vibration when changing speed	taking rotor position indicator readings
108	Excessive water in an operating lube oil system can be detected by _____.	the amount of water discharging from the lube oil purifier	sounding the lube oil settling tank	examining the lube oil strainers	checking oil for unusually low temperature
109	Expansion and contraction of a propulsion turbine casing due to changes in operating temperature, are normally compensated by _____.	expansion bolts at the base of the steam line	an expansion loop in the exhaust line	supporting the forward end on a deep flexible I-beam	corrugations in the steam chest
110	Failure to use the turning gear prior to warming up a main turbine will damage the _____.	thrust bearings	gland sealing system	rotor assembly	nozzle located in the diaphragm
111	Fine metallic particles, which may originate from wear or failure of the lube oil service pump internal parts, are prevented from contaminating the bearings served by the lube oil system by _____.	the settling action of solid matter in the gravity tank	use of the magnetic strainers in the lube oil service pump discharge piping	the change of direction and settling action within the lube oil coolers	batch centrifuging the lube oil at least once a week
112	Flexible couplings used between main turbine rotors and reduction gear installations are usually _____.	gear type	grid type	flexible claw type	labyrinth type
113	Foaming in a lube oil system can cause _____.	oil overflow	loss of cooler effectiveness	inadequate lubrication	all of the above
114	For a gravity type lube oil system, a remote pressure sensing device is installed at the point of highest static head pressure on the main unit to enable the watch engineer to _____. I. be certain that the bearings are being adequately lubricated II. determine if there is sufficient lube oil pressure to the main engine	I only	II only	Both I and II	Neither I nor II

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115	For a gravity type lube oil system, a remote pressure sensing device is installed on the main unit lube oil header to enable the watch engineer to _____. I. determine if there is sufficient lube oil pressure to the main engine II. be certain that the bearings are being adequately lubricated	I only	II only	Both I and II	Neither I nor II
116	For a large main propulsion turbine, the most commonly used turbine thrust bearing is the _____.	pivoted segmental shoe	overhung turbine wheel	self-aligning shell	self-oiling sleeve
117	For a period of time immediately after being secured, turbines should be rotated slowly to avoid _____.	damage to the reduction gear teeth	distortion of the rotor shaft	excessive strain on the quill shaft flexible coupling	seizure of the main bearing
118	For the gland seal regulator shown in the illustration (SE-0019), an increase in gland seal pressure will result in _____.	piston "F" moving downward to shut the makeup steam valve "B" and open the exhaust valve "E"	piston "F" moving upward to shut the makeup steam valve "B" and open the exhaust valve "E"	piston "F" moving downward to open the makeup steam valve "B" and close the exhaust valve "E"	piston "F" moving upward to open the makeup steam valve "B" and close the exhaust valve "E"
119	For the gland seal regulator shown in the illustration SE-0019, a decrease in gland seal pressure will result in a _____.	decrease of pressure on the bellows, and the pivot rod will move downward	increase of pressure on the bellows, and the pivot rod will move downward	increase of pressure on the bellows, and the pivot rod will move upward	decrease of pressure on the bellows, and the pivot rod will move upward
120	Fresh water accumulating in the reduction gear sump may be directly attributed to a/an _____.	inefficient gland sealing system	faulty turbine casing drain valve	lube oil cooler tube leak	fractured main condenser support sheet
121	From the data shown in the illustration, what would be the speed of the L.P. turbine rotor if the propeller shaft was turning at 90 RPM?	1,545 RPM	2,794 RPM	3,947 RPM	4,316 RPM
122	Gear surface failure caused by exceeding the endurance limit of the surface material is characterized by _____.	initial or corrective pitting	destructive pitting	spalling	All of the above are correct.
123	Gland sealing steam is used during steam turbine operation to prevent the loss of _____.	oil	air	vacuum	temperature
124	Gland sealing steam is used on propulsion turbines to prevent _____.	air leakage into the turbine	steam leakage through the casing drains	overheating of the labyrinth packing	reversed steam flow at interstage bleeds
125	Guardian valves are installed on main propulsion turbines to _____.	prevent steam from leaking into the astern element while the vessel is maneuvering	provide an emergency means of quickly closing the throttle	provide a means to supply steam directly to the astern element of the turbine	prevent steam from leaking into the astern element while at full sea speed

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126	Guardian valves are installed on main propulsion turbines to _____.	prevent steam from leaking into the astern element while the vessel is maneuvering	provide an emergency means of quick throttle closing	provide a means to supply steam directly to the astern element of the turbine	prevent steam from leaking into the astern element at full sea speed
127	Helical gears are preferred over spur gears for reduction gear units due to they fact that they _____.	prevent torsional stress	eliminate pinion deflection	produce less noise and vibration	be easier to lubricate at high speeds
128	Helical gears are preferred over spur gears for steam turbine reduction gear units due to the fact that they _____.	prevent torsional stress	eliminate pinion deflection	produce less noise and vibration	be easier to lubricate at high speeds
129	Hot running bearings can be caused by _____.	inadequate lube oil supply	contaminated lube oil	excessive loading	all of the above
130	How are line shaft bearings usually lubricated?	Gravity feed	Pressure feed	Oil lubricating disks	Oil lubricating rings
131	How is an excess of turbine gland seal steam remedied?	It exhausts to atmosphere.	It drains to the makeup feed tank.	It is directed to the gland exhaust condenser.	It is recirculated via the loop seal.
132	How is the axial clearance indicator used on a turbine?	The axial clearance indicator is inserted in the depth gauge well until it rests on the reference boss, and the reading is noted.	After the axial clearance indicator is screwed into contact with the rotor, shims are placed in the clearance well, and the thickness is measured.	The arm of the axial clearance indicator is pushed so contact is made with the end of the rotor, and the reading on the scale is noted.	A bridge gauge is placed across the bearing, and the gap between bridge and rotor is measured by the axial clearance indicator.
133	How is the lube oil temperature controlled in the pressurized lube oil system shown in the illustration?	Sea water flow through the cooler is adjusted by opening or closing the inlet valve.	A thermostatic valve diverts sea water flow around the cooler.	A thermostatic valve sensor determines temperature downstream of the L.O. coolers and the valve diverts lube oil flow through or around the cooler accordingly.	Lube oil flow through the cooler is adjusted by changing the speed of the lube oil pump.
134	How many Curtis stages are contained in the turbine shown in the illustration?	1	2	3	only a reaction turbine stage is shown
135	How many pinion gears are required in an articulated, double reduction gear set for a cross-compounded turbine?	Two	Four	Six	Eight
136	How many pressure drops occur in the turbine stage shown in the illustration?	One	Two	Three	Four

ID #	Question	Choice A	Choice B	Choice C	Choice D
137	If a higher than normal water level is observed through the inspection port of a flash evaporator, you should suspect _____.	a leak in the feed water heater	improper vacuum	a malfunctioning brine pump	a clogged desuperheater water strainer
138	If a line shaft bearing begins to overheat, the shaft speed should be reduced. If overheating persists, you should then _____.	increase lube oil pressure to the bearing	decrease lube oil pressure to the bearing	apply emergency cooling water externally to the bearing	flood the bearing with a higher viscosity oil to provide emergency lubrication and cooling
139	If a lube oil pump fails to build up discharge pressure when first started, the cause could be the _____.	bypass valve is closed	discharge valve is open	suction pressure is high	shaft packing gland requires adjustment
140	If a lube oil pump fails to build up discharge pressure, the cause could be the _____.	bypass valve is closed	discharge valve is open	suction vacuum is high	suction valve is closed
141	If a main lube oil pump fails to build up discharge pressure, the cause could be the _____.	bypass valve is closed	gravity tank is overflowing	discharge strainer magnets have not been cleaned	shaft packing gland requires tightening
142	If a severe leak develops in the electro-hydraulic steering gear, which of the listed conditions could result?	Loss of vessel steering	Overheating of the gyrocompass	Jamming of the six-way valve	Jamming of the follow-up device
143	If a spring bearing begins to run at an abnormally high temperature, you should _____.	increase the water flow to the main lube oil cooler	immediately stop the shaft to prevent seizing	reduce the shaft speed and supply emergency cooling water to the spring bearing housing	reverse direction of the shaft to flush out the bearing
144	If a tube should leak in an operating main steam turbine lube oil cooler, the water will not immediately contaminate the oil because the _____.	second-stage discharge valve will open	plug type bypass valve will open	cooling pump would automatically shut off	oil pressure is greater than the water pressure
145	If a turbine bearing high temperature alarm sounds, you should immediately _____.	increase lubricating oil flow	increase cooling water flow	slow the turbine	stop the turbine
146	If an operating propulsion unit requires excessive quantities of gland sealing steam, you should suspect a _____.	vacuum leak in the condenser shell	flooded main condenser hot well	worn or damaged labyrinth packing	restriction in the gland leak off piping
147	If contaminated lube oil were allowed to settle undisturbed in a tank, into which layers would the contaminants separate?	Sediment on the bottom, oil in the middle, and water on top.	Sediment on the bottom, water in the middle, and oil on top.	Water on the bottom, oil in the middle, and sediment on top.	Water on the bottom, sediment in the middle, and oil on top.
148	If it should become necessary to abandon a compartment because of the danger of a large steam leak on a boiler, which of the following actions represents the best avenue of escape?	Escape through another compartment on a higher level.	Escape through another compartment on a lower level.	Escape by way of a fire room ladder to the outer deck.	Use fire room elevator to an upper deck.

ID #	Question	Choice A	Choice B	Choice C	Choice D
149	If lube oil pressure to the main turbines is lost while underway at sea speed, the rotor should be stopped immediately. This is accomplished by _____.	applying the pony brake	tightening the stern tube packing gland	securing all steam to the turbines	admitting astern steam to the turbines after securing ahead steam
150	If saltwater leaks into and contaminates the main lubricating oil system, which of the following remedial actions should be taken?	Locate the leak and seal it off when time permits.	Disengage the jacking gear and allow contaminated oil to cool to engine room temperature.	Run the engines at idle and prevent the circulation of contaminated oil.	Seal off the leak and promptly remove and replace all contaminated oil from the system.
151	If steam is admitted to the main propulsion turbine with the jacking gear engaged, which of the following problems can occur?	Uneven warming of the turbine.	Destruction of the jacking gear.	A possibility of shearing the jacking gear flexible coupling.	Excessive tooth stress on the high pressure first reduction pinion.
152	If the bowl of a centrifugal purifier is improperly reassembled with O-ring seals that have become hard and flat, the centrifuge _____.	bearings will be permanently damaged	will begin to lose its water seal	will discharge oil to the main sump as dirty as the input	bowl will rotate at a lower speed
153	If the engineer on watch has reason to doubt the accuracy of the water level showing in the boiler gage glass, he should FIRST _____.	open the auxiliary feed line	blow down the gage glass	replace the gage glass	start the standby feed pump
154	If the gland assembly, shown in the illustration, is located at the forward end of the high pressure turbine, and the vessel is operating at full speed ahead, _____.	A slight vacuum would exist at "E"	sealing steam would only enter at "F"	sealing steam would enter at "E" and "F" from the LP turbine	this gland would be self sealing and provide sealing steam to the other glands
155	If the gland assembly, shown in the illustration, is located at the forward end of the high pressure turbine, and the vessel is operating at minimum maneuvering speeds, which of the following statements is true?	Sealing steam would enter at "E".	Sealing steam would enter at "F".	Sealing steam would enter at "E" and "F".	This gland would be self sealing and provide sealing steam to the other glands.
156	If the main and standby lube oil service pumps of the main engine fail while underway at sea, _____.	an emergency supply of oil in the gravity tank will provide time to crash stop the turbine and gears	the reduction gear bearings will immediately fail	the turbine bearings will immediately fail	emergency lubrication can be supplied through the use of the hand pump
157	If the main lube oil pump fails to build up discharge pressure, the reason could be the _____.	bypass valve is closed	discharge valve is open	shaft packing gland requires adjustment	suction pressure is too high
158	If the main propulsion turbine begins to vibrate severely while you are increasing speed, you should _____.	open the throttle wider to pass through the critical speed	hold the turbine at that speed until vibration stops	stop the turbine and not answer any more bells	immediately slow the turbine to see if the vibration will stop

ID #	Question	Choice A	Choice B	Choice C	Choice D
159	If the main propulsion turbine speed percentage is increase from 30% to 60%, what percentage of horsepower is required when the new speed is attained as shown in the illustrated graph?	10%	20%	30%	40%
160	If the main turbine bearing lube oil pressure drops to 'zero' and cannot be restored immediately, you should _____.	notify bridge and crash stop the engine	reduce turbine rotor speed until lube oil sump level returns to normal	reduce turbine rotor speed and pump lube oil with the hand emergency pump	strike down makeup lube oil from the gravity tanks
161	If the rated distillate production of a submerged tube type evaporator cannot be maintained with the supplied maximum steam pressure, the evaporator _____.	chemical feed must be increased	has a serious brine leak	condenser pressure should be raised	heating surfaces have excessive scale buildup
162	If two turbo-generators with the same no-load speed settings are operating in parallel, the unit whose governor has the lesser speed droop will _____.	assume the smaller share of the load	assume the larger share of the load	have poor sensitivity characteristics	have poor power response
163	If you are notified that one of the turbine bearings is overheated, which of the following actions should you take first as the watch engineer?	Immediately reduce speed.	Immediately stop the turbine.	Increase lube oil pump discharge pressure and check the strainer for metal particles.	Increase cooling water supply to the lube oil cooler.
164	If you are underway at full speed on a vessel fitted with a main propulsion turbine pressure lubrication system, which of the following actions will be necessary upon complete loss of lube oil pressure?	Slow the main engines and strike down additional oil from the gravity tank.	First close the ahead throttle valve, then open the astern guardian valve, and then open the astern throttle to admit astern steam as quickly as possible.	Secure main steam to the turbines immediately and engage jacking gear.	Secure main steam to the turbines and break vacuum on the main plant immediately.
165	If you hear a 'crackling' sound coming from a salt water centrifugal pump casing, the most probable cause of the noise would be _____.	insufficient speed	cavitation	excessive discharge pressure	excessive net positive suction head
166	If you hear a 'crackling' sound coming from a salt water centrifugal pump casing, the most probable cause of the noise would be _____.	insufficient packing	an oversized lantern ring	excessive suction lift	reversed pump rotation
167	Improper operation or faulty main steam turbine components may be indicated by an abnormal variation in _____.	speed	vibration	noise level	All of the above are individually correct
168	In a cross-compound main propulsion unit, the astern turbine is usually installed at the _____.	low pressure end of the low pressure turbine	high pressure end of the low pressure turbine	low pressure end of the high pressure turbine	high pressure end of the high pressure turbine

ID #	Question	Choice A	Choice B	Choice C	Choice D
169	In a cross-compounded turbine operating at full load, the total available steam energy is approximately divided between the HP and LP turbine in the ratio of _____.	1:1	2:1	3:1	4:1
170	In a cross-compounded turbine propulsion plant, steam enters the _____.	high pressure, intermediate and low pressure units simultaneously	high pressure unit and then flows through a crossover to the low pressure unit	high and low pressure units simultaneously	high pressure unit and then cross-flows to the condenser
171	In a disk type centrifugal purifier, the bowl is mounted on the upper end of the _____.	worm wheel	radial thrust bearing	bowl spindle	friction clutch
172	In a disk type centrifugal purifier, the contaminated oil enters the centrifuge _____.	at the bottom through the oil inlet	at the top through the regulating tube	through the neck of the top disk	through the funnel body
173	In a disk type lube oil purifier, heavy impurities collect mostly _____.	at the bottom of the unit	along the center shaft	at the water discharge	on the inside surfaces of the bowl
174	In a disk type lubricating oil centrifuge _____.	the centrifuge driving gears are lubricated by the reclaimed oil as it leaves the bowl	all dirt and sludge are discharged with the cooling water	sealing water must never be supplied until after oil is fed to the unit	deterioration of the bowl ring gasket will cause the purifier to lose its water seal
175	In a disk-type purifier which component is used to separate lube oil into thin layers and create shallow settling distances?	A discharge ring	A three-wing device	A tubular bowl	A series of cone-shaped plates
176	In a double articulated reduction gear system, the component labeled "1" would be identified as the _____?	high speed pinion	low speed pinion	quill shaft	high speed gear
177	In a double articulated reduction gear system, the component labeled "2" would be identified as the _____?	high speed pinion	low speed pinion	quill shaft	high speed gear
178	In a double articulated reduction gear system, the component labeled "3" would be identified as the _____.	high speed pinion	low speed gear	quill shaft	high speed gear
179	In a double reduction gear, the function of a quill shaft is to provide flexibility between the second reduction pinion and the _____.	bull gear	second reduction gear	first reduction gear	first reduction pinion
180	In a gravity lube oil system, a sight glass is installed in a line near the operating platform. This line connects the _____.	bottom of the gravity tank and the lube oil headers	bottom of the gravity tank and the sump	gravity tank overflow and the lube oil headers	gravity tank overflow and the sump
181	In a gravity type lube oil service system, if no lube oil appears in the sight glass (bull's eye) of the return drop line while underway, this is a positive indication that _____.	no oil is flowing to the bearings	no oil is overflowing from the gravity tank	there is a failure of all lube oil pumps	the gravity tanks are empty

ID #	Question	Choice A	Choice B	Choice C	Choice D
182	In a modern main propulsion turbine installations, lube oil system strainers are usually located in the _____.	bearing supply line	gravity tank overflow line	pump suction line	gravity tank discharge line
183	In a multistage reaction turbine, the dummy piston and cylinder function to _____.	counteract rotor axial thrust	dynamically balance the rotating rotor	eliminate the pressure drop across the blades	provide a means of measuring axial clearances
184	In a pressure type main propulsion turbine lubrication system, the lube oil service pumps normally take suction from the main sump and discharge directly to the _____.	gravity feed tank	lube oil coolers	lube oil header	main thrust bearing
185	In a reaction turbine, the axial thrust due to the reactive force on the rotor blading drives the rotor _____.	toward the high pressure end	toward the low pressure end	against the dummy piston	toward the diaphragm squealer rings
186	In a reaction turbine, the fixed blades function to _____.	decrease steam velocity	increase steam velocity	prevent turbulence	produce turbulence
187	In a reduction gear train, a quill shaft of high torsional flexibility provides _____.	self-adjustment of the pinion gear shaft	rigidity between the elements of the gear train	efficient distribution of oil to the various elements of the gear train	equal distribution of the load among the various elements of the gear train
188	In a segmental pivoted-shoe thrust bearing, the thrust load among the shoes is equalized by the _____.	base ring	oil wedge	leveling plates	thrust collar
189	In a steam turbine and reduction gear main propulsion plant, the alarm sensor for low turbine oil pressure is usually installed _____.	at a point on the inlet side of the main bearings as close to the bearings as possible	at a point on the outlet side of the main bearings as close to the bearings as possible	at the outlet of the main thrust bearing	at the end of the supply line header to the bearings
190	In a steam turbine propulsion plant, the source of metal particles adhering to the magnets in the lube oil strainer is probably from the _____.	turbine shaft journal	turbine bearing shell	reduction gears	bearing babbitt material
191	In a tubular bowl centrifugal purifier, lube oil is rotated at the same speed as the bowl by the _____.	ring dam	bowl boss	three-wing device	flexible spindle
192	In a tubular-bowl type centrifugal lube oil purifier, any solids separated from the oil are _____.	discharged with the water	removed through the waste drain	retained in the bowl	solidified on the upper cover
193	In a tubular-bowl type centrifugal lube oil purifier, any solids separated from the oil are _____.	discharged with the water	removed during the 'shoot' cycle	retained in the bowl	solidified on the upper cover
194	In addition to causing erosion of turbine blades, slugs of water in the steam supply to a turbine driven pump can result in _____.	thermal shock to the bearings	erratic governor operation	loss of load with resultant turbine overspeed	overheating of the wearing rings

ID #	Question	Choice A	Choice B	Choice C	Choice D
195	In addition to the direction of steam flow, which of the descriptions listed may also be used to classify turbines?	The method in which the steam causes the turbine rotor to rotate.	The type of staging and compounding of steam pressures and velocities.	The division of the steam flow.	All of the above
196	In an impulse turbine, the fixed blades function to _____.	decrease steam velocity	change the direction of steam flow	equalize pressure differences	prevent steam turbulence
197	In any governor there is a small range of speed in which no corrective action occurs. This speed range is called the governor dead band and is caused by _____.	friction in the governor linkage and control valve	excessive sensitivity in the governor control valve	speed droop designed into the governor system	speeder spring surge in the governor servomotor system
198	In comparison to a reaction turbine, a steam loss specific to an impulse turbine is known as _____.	radiation loss	leaving loss	blade and nozzle loss	diaphragm packing loss
199	In herringbone helical gear sets, the tooth contact loading _____.	is both a sliding and rolling action	is distributed over several teeth simultaneously	is distributed between two opposing helices	all of the above
200	In main propulsion systems, which metal is used in the construction of the shafts for a main reduction gear unit?	Aluminum-bronze	Forged steel	Aluminum	Cast steel
201	In modern reaction turbines, thin tipping is a procedure designed to _____.	allow for axial expansion	increase blade strength and rigidity	reduce tip leakage	maintain radial clearances
202	In order to maintain the effectiveness of the lube oil centrifuge to remove water, the engineer in charge should _____.	have the centrifuge cleaned only once every 30 days	take lube oil samples each week and place in clear containers for inspection	maintain the lube oil input temperature at a maximum of 110°F	insure that the oil input is always twice the output capacity
203	In order to maintain the required lube oil temperature leaving a lube oil cooler, where an automatic bypass valve is not provided, which of the following operations is correct?	The cooling water to the lube oil cooler is directly regulated to maintain the proper lube oil temperature.	The quantity of lube oil to the cooler is regulated.	The cooling water discharge leaving the cooler is directly regulated.	The lube oil velocity from the cooler is regulated.
204	In order to obtain the best performance with a lube oil purifier, the lube oil inlet temperature should _____.	never exceed the highest main engine bearing temperature	be equal to the normal lube oil cooler outlet temperature	be equal to main lube oil sump temperature	be maintained in a temperature range of 160°F to a maximum of 180°F
205	In order to operate the main engine with only the high pressure turbine in service, the unit should be arranged _____.	to secure only the gland sealing steam to the low pressure turbine	with a blank installed in the high pressure turbine steam inlet	so that the astern turbine is providing approximately one half the output horsepower	with the high pressure turbine exhausting directly to the main condenser
206	In order to reduce the oil clearance between the collar and the astern thrust element shown in the illustration, you would _____.	increase the thickness of the adjusting ring	decrease the thickness of the adjusting ring	increase the thickness of the filler piece	decrease the thickness of the filler piece

ID #	Question	Choice A	Choice B	Choice C	Choice D
207	In securing the main turbines, steam to the second stage air ejectors should be left on for a short period of time in order to _____.	dry out the main turbines	insure equal cooling of the main turbine bearings	prevent excessive condensate depression	remove the excessive amount of non-condensable vapors which accumulated during maneuvering operations
208	In some lube oil systems, the temperature of the lube oil downstream from the lube oil cooler is directly regulated by _____.	a thermostatically controlled valve which bypasses oil around the cooler	the amount of latent heat that the oil carries away from the bearings	the ambient sea water temperature	The operating speed range of the equipment
209	In steam turbine and reduction gear units, lube oil coolers installed in the lube oil system are located between the _____.	lube oil pumps and gravity tanks	gravity tanks and main unit	gravity tanks and lube oil sump	lube oil sump and lube oil pumps
210	In steam turbine main engine installations, how are the main reduction gear bearings identical to other radial bearings?	They are of the single casting type bearing.	They are babbitt-lined bearings.	They are self-aligning bearings.	They are spherical seated bearings.
211	In the diagrammatic arrangement of the thrust bearing, shown in the illustration, the direction of shaft rotation and the direction of thrust are indicated respectively by arrows _____.	F and J	F and H	G and J	G and H
212	In the event of failure of the bellows "I" shown in the illustration (SE-0019), _____.	piston "F" moves upward to open the exhaust valve and close the makeup steam valve.	piston "F" moves upward to close the exhaust valve and open the makeup steam valve	piston "F" moves downward to close the exhaust valve and open the steam makeup valve	piston "F" moves downward to open the exhaust valve and close the steam makeup valve
213	In the hydraulically operated turbine gland seal regulator, illustrated, the device used as the gland seal pressure sensing unit is called a/an _____.	bellows	manifold	pilot valve	pivot rods and block
214	In the illustrated device, what would be a reason for oil being discharged from port "N" ?	The device being operated as a clarifier.	The ring dam size is too small.	This would be normal for the operation.	The ring dam size is too large.
215	In the illustrated hydraulically operated turbine gland seal regulator, the exhaust dump valve is closed as a result of the piston being actuated by a/an _____.	bellows at "I"	spring at "F"	vacuum at "G"	pressure at "A"
216	In the illustration of a hydraulically operated turbine gland seal regulator, the gland seal pressure dump valve is labeled _____.	E	C	G	A
217	In the illustration of a hydraulically operated turbine gland seal regulator, the gland seal pressure sensing line is labeled _____.	G	C	D	A

ID #	Question	Choice A	Choice B	Choice C	Choice D
218	In the illustration of a typical ship service turbo generator control system, the device that monitors turbine exhaust pressure is labeled _____.	K	J	M	F
219	In the illustration of a typical ship service turbo generator control system, the handle labeled "B" is used to _____.	roll over the high speed pinion	pump up the lube oil manifold	bypass the governor control	reset the overspeed trip
220	In the operation of a lube oil clarifier, the position of the oil-water interface should be _____.	maintained by the ring dam	maintained by the number of disks in the disk stack	nonexistent	maintained by the diaphragm-type, weir control valve
221	In the thrust bearing assembly illustrated the total oil clearance can be correctly decreased by _____.	increasing the thickness of the adjusting ring	increasing the thickness of the filler piece	decreasing the thickness of the adjusting ring	decreasing the thickness of the filler piece
222	In the turbine and gear set shown in the illustration, when going astern, the minimum tolerable clearance between the rotor and intermediate or guide blading is _____.	.025 inch	.070 inch	.090 inch	.150 inch
223	In what classification of steam turbines are the moving blades and the adjacent fixed rows of blades shaped to act as nozzles?	Impulse	Radial flow	Reaction	Helical flow
224	In what positions will the air-operated regulating valves, shown in the illustration, be in when the steam in the gland seal supply line is excessive?	Both valves are open.	Both valves are closed.	The excess steam unloading valve is open and the supply pressure control valve is shut.	The excess steam unloading valve is shut and the supply pressure control valve is open.
225	In which type of turbine does a pressure drop exist through the fixed blades and the moving blades?	Impulse	Reaction	Rateau	Curtis
226	In which type of turbine does the steam pass through reversing chambers machined on the inner surface of the casing, causing the steam to be redirected back to the turbine wheel rim?	Helical flow turbine	Axial flow turbine	Combination axial and radial flow turbine	Cross compound flow turbine
227	Indicated high salinity of the distillate discharged from a flash-type distilling plant will be a result of _____.	operating at reduced vacuum conditions	carrying the brine level below normal	leaks in the demister baffles	reduced feed water heater temperatures
228	Item "Q" in the illustration is used to _____.	guide the oil to be cleaned along the inside of the bowl for discharge	balance the force distribution of the three wing device	assist in breaking down surface tension and thereby increase separation of solids and liquids from the oil	establish the position of the three wing within the bowl
229	Journal bearings used with modern turbine rotors are manufactured in two halves in order to _____.	permit removal of the bearing without removing the rotor from the turbine	facilitate interchanging with other bearing halves	maintain axial alignment and reduce thrust	provide for positive oil flow at all loads

ID #	Question	Choice A	Choice B	Choice C	Choice D
230	Labyrinth packing rings are installed on turbine diaphragms to minimize _____.	interstage steam leakage along the turbine rotor	air leakage from entering the turbine casing	pressure buildup on both sides of the diaphragm	steam from escaping to the atmosphere
231	Labyrinth seals used to reduce leakage around a turbine shaft are constructed of _____.	spring bound carbon segments	braided asbestos covered core segments	staged rubber composition seal stripping	machined metallic packing strips or fins
232	Large temperature and pressure drops which occur in the first stage of a combination impulse and reaction turbine are caused by steam passing through _____.	a nozzle diaphragm in the low pressure end of the turbine	a single row of blades more than once	a dummy piston and cylinder to offset axial thrust	one or more velocity-compounded impulse stages at the high pressure end of the turbine
233	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
234	Low pressure steam is used to keep air from leaking into turbine casing along the turbine shaft. For this purpose, which of the following steam systems is used?	Direct admission of 35 psi (241.3 kPa) auxiliary steam	Superheated steam system	Gland leakoff steam system	Gland sealing steam system
235	Lube oil cannot be efficiently filtered if its _____.	viscosity index is too low	temperature is too low	pump discharge pressure is higher than the system pressure	pump capacity is greater than the system's needs
236	Lube oil coolers are necessary in most engine lubricating systems because _____.	when engine oil is used continuously, the coolers prevent the oil from wearing out	harmful acids need to be condensed before being removed by a centrifuge	they maintain the oils viscosity and film strength while removing the residual heat of the bearings	cooling decreases viscosity and improves engine thermal efficiency
237	Lube oil is preheated before centrifuging in order to _____.	boil off water	prevent corrosion	reduce friction of the rotating components of the centrifuge	improve purification
238	Lube oil temperature leaving the lube oil coolers is regulated by throttling the _____.	cooling water inlet valve	cooling water outlet valve	lube oil return flow valve	lube oil outlet valve
239	Magnets are installed in the main propulsion turbine lube oil pump strainers to attract metal particles released through wearing of _____.	turbine labyrinth	turbine blades	reduction gears	all of the above
240	Magnets are installed in the main propulsion turbine lube oil strainers to attract metal particles released through wearing of the _____.	reduction gears	turbine blades	babbit bearings	turbine labyrinth

ID #	Question	Choice A	Choice B	Choice C	Choice D
241	Magnets located in lube oil strainers serve to _____.	remove all metallic particles from the lube oil	remove ferrous metallic particles from the lube oil	remove nonferrous metallic particles from the lube oil	hold the strainer cover in place when removing or installing the cover bolts
242	Main reduction and pinion gears are double helically cut to _____.	balance axial thrust and reduce vibration	decrease reduction gear radial bearing loads	increase tooth deflection at high speeds	decrease the number of teeth in contact
243	Main reduction and pinion gears are double helically cut to _____.	reduce end thrust and noise	decrease reduction gear radial bearing loads	increase tooth deflection at high speeds	decrease the number of teeth in contact
244	Main steam turbine bearings are lined with _____.	babbitt	steel	cast-iron	ferrous oxide
245	Moisture erosion in the last stages of the low pressure turbine will result from _____.	low inlet steam superheat temperature	an open LP bleed steam valve	an open gland exhaust valve	All of the above are correct
246	Most auxiliary turbine feed pumps do not require an external source of gland sealing steam because they _____.	operate at relatively low pressures	exhaust to pressures above atmospheric pressure	utilize carbon packing rings at the low pressure end	operate with only a small amount of axial thrust
247	Most auxiliary turbines do not require an external source of gland sealing steam because they _____.	operate at relatively low pressures	exhaust to pressures above atmospheric pressure	utilize carbon packing rings at the low pressure end	operate with only a small amount of axial thrust
248	Most main propulsion reduction gear bearings are _____.	self-lubricating, sealed, roller ball type	rigidly mounted, babbitt lined, split type	spherical-seated, tapered roller type	self-aligning, solid bushings
249	Most main reduction gear units employ double helical cut gears, rather than single helical cut gears, because double helical cut gears _____.	eliminate the need for a turbine dummy piston	eliminate the need for spherically seated bearings	prevent unequal tooth contact	operate without significant axial thrust
250	No lube oil appearing in the sight glass (bull's eye) of a gravity type system is a positive indication of _____.	no oil flowing to the bearings	no oil is overflowing the gravity tank	failure of all lube oil pumps	the gravity tanks being empty
251	No lube oil appearing in the sight glass (bull's eye) of a gravity type system is a positive indication of _____.	no oil flowing to the bearings	no oil overflowing in the gravity tank	oil drop line is closed	the gravity tanks being empty
252	Nozzle diaphragms are installed in pressure-compounded impulse turbines to _____.	support moving blades	support shrouding	hold the nozzles of the stage and admit steam to moving blades	eliminate blade and nozzle losses
253	Of the many impurities commonly found in marine lubricating oil, which of the following CANNOT be removed by a centrifugal purifier at normal operating speeds and temperatures?	Water	Carbon particles	Diesel fuel oil	Metal particles

ID #	Question	Choice A	Choice B	Choice C	Choice D
254	Oil discharged from the illustrated device has a milky-white appearance which is due to _____.	proper operation of the centrifuge	insufficient tension being maintained by "H"	excessive tension provided by "Q"	slightly worn item "V"
255	Oil flowing through the sight glass in the line between the lube oil gravity tank and main sump indicates the _____.	gravity tank is overflowing	lube oil pump is stopped	lube oil suction strainer is clogged	lube oil sump is full
256	Oil supply pressure to the main lube oil header of a gravity feed lube oil system is _____.	the result of the height of the gravity tank above the manifold	the sum of the lube oil static head pressure and service pump discharge pressure	the difference between the lube oil static head pressure and service pump discharge pressure	equal to the service pump discharge pressure, since the static heads of the lines to and from the gravity tank cancel out one another
257	On a main propulsion turbine bearing, the readings obtained with a bridge gage represent the _____.	oil clearance and bearing wear	babbitt thickness	diaphragm tip clearance	blade axial clearance
258	On a ship equipped with a gravity type lube oil system, which of the conditions listed will occur FIRST if the main lube oil pump discharge pressure is lost?	All bearing oil pressure will be lost.	An alarm will sound.	The astern throttle will immediately open.	Lube oil will be provided to the bearings and gears via the gravity tank overflow line.
259	On a steam vessel, if a centrifugal main feed pump were operating at shutoff head with the recirculating line closed, which of the following conditions could occur?	Water level in the DC heater would decrease.	An increased water level in the steam drum.	Flashing at the suction side of the pump.	Excessive diaphragm seal wear in the feed water regulator.
260	On an fully automated vessel steaming at sea speed, which of the following engine room responses will automatically be actuated when the bridge throttle control is changed from full ahead to slow ahead?	Main turbine extraction valves will open.	Scoop injection valve will open.	Main condensate recirculating valve will open.	First-stage feed water heater will be bypassed.
261	On main turbine propulsion units, gear type flexible couplings are generally used between the _____.	rotor shaft and pinion shaft	rotor shaft and quill shaft	quill shaft and high speed pinion	second reduction and the shaft thrust bearing
262	On watch aboard ship, which of the following conditions will prevent a general service shipboard pump from achieving its maximum suction lift?	Leaks developed in the suction piping.	Restriction in the suction line.	Gases or vapors released in the liquid as a result of greater than normal pressure drops.	All of the above.
263	One cause for unusually low lube oil service pump pressure may be due to _____.	low sea water temperature	excessively high lube oil temperature	wasted lube oil cooler zincs	all of the above
264	One function of the disks, in a disk-type centrifugal purifier, is to divide the bowl space into many separate passages to _____.	minimize agitation of the oil-water mixture	increase hydraulic head needed for proper circulation	completely filter out suspended particles	prevent bowl spindle vibration

ID #	Question	Choice A	Choice B	Choice C	Choice D
265	One limiting problem of lube oil filters restricting their use in large lube oil systems is _____.	they easily rupture at normal working pressures	as the oil temperature fluctuates during load changes their effectiveness changes inversely to the temperature	the associated large pressure drop across the filter	the need to centrifuge the oil in addition to the use of the filter
266	One method of securing shroud bands to the ends of the turbine blades is to _____.	stiffen the blades to reduce vibration	increase blade resistance to moisture in steam	assist in maintaining radial clearances	strengthen the blade root fastenings
267	One of the most effective methods of improving purification in tubular and disk type centrifugal purifiers is to _____.	decrease the viscosity of the oil by heating	increase the pressure at which the oil is fed through the purifier	match the discharge ring size outside diameter with the lube oil's specific gravity	use the smallest inside diameter of the discharge ring size without a loss of oil with the discharge water
268	Operating a steam turbine propulsion unit at medium speed, in an area with extremely cold seawater and the main circulating pump providing full cooling water flow to the condenser will result in _____.	excellent plant efficiency due to higher attainable vacuum	increased plant efficiency due to increased condensate depression	increased effectiveness of the air ejectors due to the increased main condenser vacuum	increased condensate aeration due to the inability of the air ejectors to remove excessive air accumulation from the condenser
269	Operating a steam turbine propulsion unit at medium speed, in an area with extremely cold seawater, and the main circulating pump providing full cooling water flow to the condenser will result in _____.	decreased plant efficiency due to higher attainable vacuum	increased plant efficiency due to increased condensate recirculation	reduced plant efficiency due to excessive condensate depression	increased effectiveness of the air ejectors due to the increased main condensate temperature
270	Operating a steam turbine propulsion unit at reduced speed, in an area with extremely cold seawater, with the main circulating pump providing full cooling water flow to the condenser will result in _____.	decreased plant efficiency due to higher attainable vacuum	decreased plant efficiency due to increased condensate depression	a decreased requirement for gland sealing steam	increased plant efficiency due to increased condensate depression
271	Packing rings installed on auxiliary turbines are generally lubricated by _____.	separate lube oil lines	a water leak off line	moisture in the turbine steam	a salt water service line
272	Precautions to be observed prior to starting a turbine driven cargo pump, should include _____.	assuring that the turbine casing drains are wired closed	observing the operation of the overspeed trip	open all governor oil relay drains	checking the manual trip device for proper operation
273	Prior to relieving the watch at sea, you notice black smoke coming from the stack. What would this indicate?	Insufficient excess air	Dirty burner	Soot blowers need to be operated	All of the above

ID #	Question	Choice A	Choice B	Choice C	Choice D
274	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
275	Prior to relieving the watch you should first check the fire room status by verifying the boiler steam drum level and _____.	inspecting the fires and burners	preparing to blow tubes	stack temperature	port and starboard settling tank levels
276	Prior to relieving the watch you should first check the fire room status by verifying the boiler steam drum level and _____.	lube oil temperature	fuel pressure to the burners	water drum level	steam atomization temperature to the mechanical atomizers
277	Prior to relieving the watch you should first check the fire room status by verifying the boiler water level and _____.	steam atomization pressure to the mechanical atomizers	fuel pressure to the burners	fuel oil viscosity	water drum level
278	Prior to relieving the watch you should first check the fire room status by verifying the fuel oil pressure to the boilers and _____.	boiler steam pressure	make up feed tank level	prepare to blow tubes	port and starboard settling tanks
279	Prior to relieving the watch you should first check the fire room status by verifying the fuel oil pressure to the burners and _____.	DC heater temperature	prepare to blow tubes	check port and starboard settling tanks	boiler water level
280	Prior to rolling the main turbines in preparation for getting underway, you should _____.	secure the gland sealing steam regulator	open the reduction gear casing access plates and inspect the lube oil spray pattern	circulate the lube oil through the emergency lube oil cooler	disengage the turning gear
281	Prolonged astern operation of a turbine will cause _____.	overheating of the stern gland	overheating of the ahead stages	improper functioning of the air ejectors	loss of suction at the condensate pump
282	Proper vacuum must be maintained during prolonged astern operation to _____.	eliminate leaving loss in the ahead blading	minimize any appreciable amount of condensate depression	ensure proper action of the condenser sentinel valve or back pressure trip	minimize heat buildup in the ahead stages
283	Raising vacuum on a main turbine unit without using the turning gear will result in _____.	uneven heat distribution in the rotor unit	excessive time being required to raise vacuum	scoring of the rotor in way of the labyrinth packing	overheating of the second-stage air ejector
284	Reduction gear bearing bridge gage readings should be taken after _____.	rotating the journal to the point of minimum oil clearance	all bearing caps and all bearing halves are removed	rotating the bearing shell so that the point of maximum bearing wear is directly at the bottom	All of the above are correct.
285	Reduction gears for main propulsion turbines are lubricated by _____.	grease cups and gravity feed lines	oil flinger rings mounted on the shaft	leak off lines from the lube oil cooler	spray nozzles at the gear meshing points

ID #	Question	Choice A	Choice B	Choice C	Choice D
286	Reduction gears on main propulsion turbines are double helical cut to _____.	reduce torque	eliminate gear tooth thrust	increase pinion deflection	reduce the size and weight of the bull gear
287	Regarding main propulsion boilers, what condition would normally be indicated if the bridge reported that white smoke was observed coming from the stack?	high fuel oil viscosity	too much excess air	low fuel oil temperature	insufficient steam atomization pressure
288	Regarding main reduction gears, when high speed first reduction pinions and gears are connected to low speed pinions and gears, each contained in a sequential portion of the gear housing, the reduction gear unit is known as _____.	nested	locked train	articulated	none of the above
289	Regarding the bearing shown in the illustration, "X" represents the _____.	template used for bearing offset	lower bearing half	upper bearing half	vacated bearing shell space
290	Regarding the governor shown in the illustration, what would occur as the result of a speed increase by a ship's service turbo generator?	The governor weights will move inward.	The lifting beam is raised.	The pilot valve is lowered.	Oil is pumped into the operating cylinder.
291	Rotating flyweights acting against a spring force makes up a simple type of _____.	governor	reducing valve	safety valve	feed water regulator
292	Rotating flyweights, acting against a spring force, will provide a simple type of _____.	feed water regulator	safety valve	governor	reducing valve
293	Rotor axial thrust developed in a reaction turbine is the result of a steam pressure drop across _____.	the nozzles	the stationary blades	the moving blades	both the moving and stationary blades
294	Salinity cells are strategically installed in distilling units to indicate the _____.	quantity of the distillate produced	quality of the distillate produced	presence of leaks in the flash chambers	all of the above
295	Shrouding on impulse turbine blading is held in place by _____.	seal welding	circumferential dovetails	peening the tenons	locking keys
296	Shrouding, with regards to steam turbines, is rolled to the curvature of the blade ends and fitted to the blade _____.	roots	tenons	seal strips	dovetails
297	Sliding contact bearings are classified into two general categories: journal bearings and _____.	radial bearings	needle bearings	thrust bearings	roller bearings
298	Sludge tanks are used in an oil lubricating system to receive _____.	makeup oil that is to be added to the system after settling	foreign liquid matter, discharged from the lube oil purifier or the stripping pump	bilge slops that can be reclaimed after clarification	all of the oil that passes through the lube oil coolers
299	Standing watch in the engine room, a high reading is only indicated at the salinity cell labeled "6" shown in the illustration. This would be the probable result of _____.	a minor tube leak in the distillate condenser in section III	a faulty cell at this location	the compensating temperature is set too low for this cell location	All of the above

ID #	Question	Choice A	Choice B	Choice C	Choice D
300	Steam passing through a multistage impulse turbine does not impart any appreciable axial thrust to the rotor. This is primarily due to the _____.	pressure drop taking place through the moving blades	dummy piston and cylinder arrangement	equalizing holes provided in the turbine wheel	steam velocity decreasing through the nozzle diaphragms
301	Steam supplied to the main propulsion turbines is _____.	saturated steam	superheated steam	desuperheated steam	wet steam
302	Tenon peening is a technique employed by turbine manufacturers to _____.	minimize turbine rotor axial thrust	secure shroud bands to turbine blading.	balance the turbine rotor assembly	secure turbine blading to the rotor
303	The adjustable spherically seated self-aligning bearing housings used in main turbines are provided with oil deflector rings. The function of these rings is to _____.	ensure efficient lubrication of the bearing	prevent the leakage of main steam into the oil	prevent the external leakage of oil out of the bearing housing	direct the flow of oil through the bearing
304	The astern element of a main propulsion turbine is usually designed as a/an _____.	multiple entry, helical flow turbine	single entry, double flow turbine	Curtiss stage, impulse turbine	Parsons stage, reaction turbine
305	The astern guarding valve on main propulsion steam turbine units must be open when a vessel is _____.	at full sea speed	maneuvering into port	running with a warm bearing	loading cargo
306	The axial position of a turbine rotor is controlled by the thickness of the _____.	thrust bearing collar	thrust bearing filler piece	journal bearing shims	labyrinth packing fins
307	The axial position of a turbine rotor is normally adjusted by varying the thickness of the _____.	thrust bearing shoes	journal bearing shims	labyrinth packing fins	thrust bearing filler piece
308	The base ring shown in the illustration is identified by the letter _____.	A	C	D	E
309	The best indication that a bearing is being properly lubricated is by the _____.	oil pressure at the lube oil pump discharge	lube oil strainer condition during cleaning and inspection	oil temperature indicated by the bearing thermometer	oil temperature leaving the lube oil cooler
310	The bulk of the solid material entering a centrifugal purifier with lube oil is _____.	discharged with the water	trapped in the bowl	trapped in the filter	forced out the overflow
311	The component labeled "II", as shown in the illustration, is called the _____.	first reduction gear	high speed pinion	second reduction gear	second reduction pinion
312	The component shown in the illustration, labeled "I", is the _____.	first reduction gear	first reduction pinion	second reduction gear	second reduction pinion
313	The component shown in the illustration, labeled "III", is the _____.	first reduction gear	high speed pinion	second reduction gear	low speed pinion
314	The component shown in the illustration, labeled "IV", is the _____.	first reduction gear	high speed pinion	bull gear	low speed pinion
315	The components in a Kingsbury thrust bearing assembly that are responsible for transmitting an equal thrust load to all the shoes are called the _____.	Leveling plates	Inner raceways	Outer raceways	Base rings

ID #	Question	Choice A	Choice B	Choice C	Choice D
316	The constant pressure governor of a turbine-driven feed pump maintains which of the following pressures at a constant value for all capacities?	Turbine inlet	Turbine exhaust	Pump suction	Pump discharge
317	The correct radial clearances between the rotor and the casing in a propulsion turbine are maintained by the turbine _____.	interstage packing	thrust bearing	diaphragms	journal bearings
318	The designed function of fixed blades in an impulse turbine is to _____.	prevent steam turbulence	decrease steam velocity	equalize pressure differences	change the direction of steam flow
319	The diameter of a dummy piston installed in a reaction turbine is determined by _____.	rotor design and the amount of thrust to be counteracted	steam temperature and design RPM	the length and diameter of the equalizing line	the volume of the exhaust trunk and pressure drop over the last stage
320	The dirty oil inlet on centrifugal lube oil purifiers is located at the _____.	top of the tubular bowl type	bottom of the tubular bowl type	top or bottom of the disk type depending upon whether the unit is to be operated as a separator or clarifier	bottom only of the disk type
321	The disassembled thrust bearing, shown in the illustration, which of the listed parts is labeled "I"?	Base ring.	Leveling plates.	Thrust shoes.	Collar.
322	The disk stack and tubular shaft used in a lube oil centrifugal purifier, is forced to rotate at bowl speed by _____.	the use of an acme thread screw	wire springs	the locating pin	the drive pin
323	The distilled water tank has been determined to be 75% full. The tank connection to the pneumericator has been disconnected for a maintenance check. If the pneumericator operates correctly, the gage should indicate _____.	a value equal to three fourths of the actual level	a false high reading possibly permitting the entry of air into the system	the minimum value display along the provided scales	the absence of mercury in the system
324	The factor which determines the minimum amount of steam superheat required at the steam chest inlet of a main propulsion turbine is the _____.	horsepower of the turbine	vacuum in the condenser	moisture content in the steam at the LP end of the turbine	specific volume of the steam in the low pressure end of the turbine
325	The FIRST adverse effect resulting from main bearing wear in an impulse turbine is _____.	wear of radial dummy piston packing strips	wear of gland seal and diaphragm labyrinth packing	loosening of bearing cap bolts	lower steam exhaust temperatures
326	The FIRST step in breaking vacuum on a main turbine unit should be to _____.	secure the steam to the main air ejector	secure the steam to the gland seal system	stop the main circulating pump	stop the main condensate pump

ID #	Question	Choice A	Choice B	Choice C	Choice D
327	<p>The following information was recorded after a recent L.P. turbine bearing installation. The bearing temperature was logged at the indicated time intervals as:</p> <p>1200-110°F(43°C) 1210-123°F(51°C) 1220-136°F(58°C) 1230-149°F(65°C) 1240-153°F(67°C) 1250-155°F(68°C) 1300-155°F(68°C)</p> <p>The shaft RPM and lube oil cooler outlet temperature remained constant. The readings indicate _____.</p>	normal temperature during wear in	water in the lube oil system	wiping of the bearing material	excessive bearing preload conditions
328	The function of a quill shaft used on a double reduction gear main propulsion unit is to _____.	allow for gross radial misalignment of the high-speed pinion	reduce backlash in the reduction gear	allow for flexibility between the high-speed pinion and first reduction gear	allow for axial flexibility between the first reduction gear and second reduction pinion
329	The general method of reducing turbine reaction blade vibration is by the use of _____.	binding wire	casing seal strips	casing diaphragms	dummy pistons
330	The gravity tank in a gravity lube oil system serves to _____.	store heated lube oil	supply the lube oil service pump with a positive suction head	settle lube oil prior to purifying	maintain oil supply for several minutes to bearings should the lube oil service pump fail
331	The intermediate pressure bleed steam system, shown in the illustration, is used to supply steam at approximately _____.	35.0 psig	13.6 psig	13.6 psia	67.0 psig
332	The item shown in the illustration is commonly identified as a _____.	machine shop lathe attachment	machine shop milling machine attachment	disk type purifier	bowl type purifier
333	The jacking gear is used in preparation for starting a marine turbine and reduction gear unit to _____.	allow the rotor to cool evenly	allow a film of oil to form on the spring bearings	prevent the gland seal steam from distorting the rotor	listen for rubbing noises from the gland seal condenser
334	The jacking gear must be engaged as quickly as possible when securing the main turbines in order to _____.	permit rapid cooling of the reduction gears	prevent uneven cooling of the turbine rotors	maintain a constant supply of lube oil to the main unit	prevent the stern tube bearing from overheating
335	The jacking gear on main propulsion turbines can be used to _____.	provide propulsion in emergencies	provide reduction gear tooth inspection	reduce turbine speed during maneuvering	lift the reduction gear casing

ID #	Question	Choice A	Choice B	Choice C	Choice D
336	The jacking/turning gear mechanism of a main propulsion geared turbine installation is normally connected through mechanical linkage to the _____.	low speed gear rotor	bull gear	low speed pinion rotor	high speed pinion rotor
337	The Kingsbury bearing is equipped with pivoted shoes in order to _____.	absorb radial stress	compensate for shaft misalignments	keep the sleeve from turning	maintain a wedge-shaped oil film
338	The labyrinth packing ring in an interstage diaphragm of an impulse turbine is prevented from rotating by _____.	a horizontal key joint extending into a slot	spring tension exerted on retaining rings	steam pressure exerted on the packing segments	the weight of the diaphragm acting on the packing ring
339	The labyrinth seals used on rotating steam turbine shafts reduces external leakage by causing _____.	successive pressure drops through the seal stages	successive temperature drops through the seal stages	pressure increases through successive seal stages	increased turbulence through successively larger labyrinth clearances
340	The level of the contaminated drain inspection tank continually decreases when steam is admitted to a fuel oil double bottom tank. You can expect _____.	a plugged heating coil	higher than normal return temperatures	a leaking makeup feed regulator	a perforated heating coil
341	The level of the drain inspection tank continually decreases after steam is admitted to a double bottom tank fuel oil heating coil. You can expect _____.	proper heating of the fluid	higher than normal temperatures	a leaking makeup feed regulator	a perforated heating coil
342	The lube oil coolers installed in a gravity lubricating oil system are located between the _____.	lube oil pumps and gravity tanks	gravity tanks and main units	gravity tanks and lube oil sump	lube oil sump and lube oil pumps
343	The main propulsion shaft turning gear usually connects to the free end of the high-speed high pressure pinion because the _____.	lubricating oil from the high-speed pinion can easily supply the turning gears	turning gears are double reduction worm type and cannot mate with the low pressure high-speed pinion	arrangement allows for the use of a muff type coupling for flexibility and smooth engagement	greatest gear ratio between the turning gear motor output and bull gear can be obtained
344	The main propulsion turbine can be damaged by _____.	operating at slow speeds	water carryover from the boilers	maintaining vacuum too high	using the jacking gear when there is no vacuum
345	The main propulsion turbine should be operated with the _____.	lowest practical chest pressure and the minimum number of nozzles required to maintain the desired speed	lowest practical chest pressure and the maximum number of nozzles possible to maintain the desired speed	highest practical chest pressure and the minimum number of nozzles required to maintain the desired speed	highest practical chest pressure and the maximum number of nozzles possible to maintain the desired speed
346	The main throttle valve on a main propulsion turbine admits steam directly into the _____.	nozzle diaphragm	turbine blades	turbine steam chest	crossover connection

ID #	Question	Choice A	Choice B	Choice C	Choice D
347	The main turbine gland sealing system is designed to _____.	seal the turbine shaft against air leakage into the turbine casing	allow minimal steam leakage out of the gland	regulate steam pressure to the glands when the main turbine is operating at reduced speeds	all of the above
348	The maintenance of reduction gear units is principally concerned with attention to keeping the _____.	reduction ratio constant between the speed of the turbine and the speed of the driven element	upper half of the gear casing secured to the lower half	gears supplied with clean oil at the proper operating pressure and temperature	drive gears aligned with drive shaft
349	The maximum lube oil temperature leaving a large, main propulsion steam turbine bearing should _____.	be always maintained at 130° F	never exceed 170°F	never exceed the inlet temperature by more than 70°F	not exceed the normal lube oil outlet temperature from the centrifugal purifier
350	The maximum lube oil temperature leaving the lube oil cooler of a main steam turbine propulsion system should _____.	be about 180°F	never be more than 60°F below the lube oil inlet temperature	never exceed 130°F	be dictated only by the existing sea water temperature
351	The maximum temperature rise of oil passing through any reduction gear set, or bearing, should not exceed _____.	30°F (16.7°C)	50°F (27.8°C)	70°F (38.9°C)	90°F (44.5°C)
352	The maximum, safe, upper limit temperature of lubricating oil discharged from the purifiers is _____.	150°F	160°F	170°F	180°F
353	The most critical period of main turbine operation is during cold start-up, rather than hot shutdown because _____.	lubricant film thickness during start-up is considerably less than the dimensions of gear surface irregularities	differential expansion can result from the temperature difference between the rotor and rotor casing	the danger of blade erosion damage from dry steam impingement is greater during start-up	harmonic vibrations associated with critical speed can easily be reached during start-up
354	The most likely result of water slugging in the steam supply to a ship service turbo generator is _____.	excessive shaft seal wear	contamination of the lube oil	damage to the turbine blades	rapid erosion of labyrinth packing
355	The normal characteristics and properties of lube oil will begin to break down if contaminated with water and _____.	allowed to stand idle	thoroughly agitated	thoroughly centrifuged	discharged at a higher pressure
356	The original bridge gage reading for a reduction gear bearing was measured as .008 inches. A year later, the bridge gage reading for the same bearing is .010 inches. This indicates _____.	bearing wear is .010 inch	oil clearance is .002 inch	bearing wear is .002 inch	oil clearance has increased .010 inch

ID #	Question	Choice A	Choice B	Choice C	Choice D
357	The overspeed tripping device installed on an auxiliary turbine is automatically actuated by _____.	pneumatic force	hydraulic pressure	high back pressure	centrifugal force
358	The part shown in the illustration would be located between which of the following components of a modern geared turbine main propulsion unit?	Between the bull gear and line shaft on the thrust bearing side of the gear.	Between the bull gear and line shaft on the side of the gear opposite the thrust bearing.	Between the first reduction gears and high-speed pinions of the high pressure and low pressure turbines.	Between the rotors and high-speed pinions of the high pressure and low pressure turbines.
359	The pinion gears used in main propulsion reduction gear mechanisms are generally constructed of _____.	aluminum	bronze	forged steel	cast steel
360	The pressure drop existing across the diaphragm of a pressure compounded impulse turbine necessitates _____.	installation of a dummy piston and equalizing line to reduce thrust	installation of a diaphragm packing seal to minimize interstage leakage	circumferential dovetailing to secure the rotor blades	Seal stripping the tips of the turbine blades
361	The pressure drop that occurs across both the moving and fixed blades of a reaction turbine is the result of the _____.	reversing blades causing a velocity drop with resultant pressure drop	conversion of the thermal energy to pressure energy always resulting in a pressure drop	interstage diaphragms creating a nozzle effect in the steam flow	moving and fixed blades being shaped to act as nozzles
362	The proper oil inlet temperature for centrifuging lube oil should be _____.	100° to 120°F (37.8° - 48.9°C)	130° to 150°F (54.4° - 65.5°C)	160° to 180°F (71.1° - 82.2°C)	190° to 210°F (87.7° - 98.9°C)
363	The purpose of a thrust bearing, mounted between the engine and the propeller of a steam plant power train, is to _____.	dampen torsional vibrations	transmit propeller thrust to the hull	maintain crankshaft radial alignment	absorb gear thrust in double helical gears
364	The purpose of oil deflector rings for turbine shafts include _____.	directing the lube oil spray	preventing oil leakage along the shaft	forming the lube oil spray pattern	removing emulsified lube oil from the sump
365	The purpose of shroud bands secured to the tips of the turbine blades is to _____.	stiffen the blades to reduce vibration	increase blade resistance to moisture in steam	assist in maintaining radial clearances	strengthen the blade root fastenings
366	The purpose of the main reduction gears is to _____.	transmit vibration and thrust to the ship's hull	reduce high turbine RPM to an efficient propeller RPM	reduce engine room noise levels during high speed operations	provide a means of reversing the main engines in an emergency
367	The purpose of the reaction turbine dummy piston is to _____.	counteract and balance axial thrust produced by the turbine rotor	act in conjunction with gland seal steam to balance turbine thrust	assist in maintaining radial clearances	eliminate radial thrust caused by the pressure increases in the turbine stages
368	The purpose of the sentinel valve installed on a turbine casing is to _____.	warn the engineer of back flow of steam from the exhaust trunk	warn the engineer of excessive pressure in the low pressure turbine casing	relieve excess pressure to the turbine extraction points	vent excess steam to the main condenser

ID #	Question	Choice A	Choice B	Choice C	Choice D
369	The reduction gear shown in the illustration is a/an _____.	nested double reduction gear	nested four-step reduction gear	articulated double reduction gear	locked-train double reduction gear
370	The reversing turbine is normally used for which of the following operations?	Emergency stopping	Backing	Maneuvering	All of the above.
371	The rotating speed of the tubular bowl centrifuge is more than twice that of the disk type. The reason for this is _____.	a narrow diameter bowl is not effected as much by windage losses as a larger diameter bowl	the friction affecting rotation is not as significant with a narrow diameter bowl	the drag bushing is used to permit the higher speed of rotation	to produce a nearly equal magnitude of centrifugal force
372	The safety device provided on a turbo generator which closes the throttle automatically when the cooling water to the condenser is insufficient is called a/an _____.	back pressure trip	low pressure trip	high temperature trip	overspeed trip
373	The sample of oil discharged from the device illustrated appears milky white, and is probably due to _____.	normal operation	worn or bad bearings in "C"	weaken spring below "V"	position of "P" is too high in the bowl
374	The size of the discharge ring used in a lube oil purifier is determined by the oil's _____.	viscosity	moisture content	sediment content	specific gravity
375	The slight wavy appearance of the tips of reduction gear teeth is a result of _____.	insufficient lube oil pressure	high lube oil temperatures	the method of manufacture and does affect normal operation	uneven bearing wear due to gross misalignment
376	The source of metal particles adhering to the magnets in a lube oil strainer is probably from the _____.	shaft journal	bearing shell	reduction gears	babbitt material
377	The splits located in the halves of main reduction gear bearings are aligned at an angle to the horizontal in order to resist _____.	oil loss	steam loss	axial stress	wiping
378	The steady frequency required from a ship service generator for electrical power is maintained by means of a _____.	throttle control mechanism	constant speed governor	speed limited governor	cam operated nozzle control valve
379	The temperature of emulsified lubricating oil entering a purifier from a preheater should range between _____.	110°-120°F	140°-150°F	160°-180°F	190°-210°F
380	The term 'separation' as used in oil purification refers to the removal of _____.	water from a mixture of oil liquids	solids from lube oil	acid contaminants from oil	oil from its additives
381	The three wing device in the unit illustrated is maintained in its position by item _____.	O	P	Q	R
382	The three wing device in the unit illustrated is maintained in its position by item _____.	B	P	Q	R
383	The three-wing device used in the tubular bowl purifier, is held in place and forced to rotate at bowl speed by the _____.	vertical shallow grooves machined into the bowl surface	flexible wire springs secured to the edge of each 'wing'	locating pin pressed into the top edge of the three-wing device	drive pin pressed into the interior surface of the bowl

ID #	Question	Choice A	Choice B	Choice C	Choice D
384	The thrust bearing wear on a turbine may be determined by checking the _____.	bearing drop	rotor axial position	rotor expansion rate	casing movement
385	The turbine of a turbo-electric drive should be secured by _____.	closing the main steam stops	dynamic braking of the generator	tripping the throttle trip by hand	closing the throttle by hand
386	The type of turbine shown in the illustration is a _____.	velocity-compounded impulse turbine	pressure-compounded impulse turbine	pressure-compounded reaction turbine	combination impulse and reaction turbine
387	The type of turbine shown in the illustration is classified as a _____.	pressure-compounded impulse	velocity-compounded impulse	pressure-velocity compounded impulse	pressure-compounded reaction
388	The usual symptoms of cavitation in a centrifugal pump would be _____.	noise and vibration	an increase in discharge pressure	an increase in suction pressure	lifting of the relief valve
389	The valve opening sequence for bar-lift nozzle control valves in a marine steam turbine is determined by _____.	the turbine idle speed	pilot valves which initiate movement of each individual valve bar	the distance between the top of the bar and the adjusting nuts on the valve stems	electro-hydraulic servomotors attached to individual valve stems
390	The vessel is currently operating at sea. Despite troubleshooting the system, the engineers of the vessel have been unable to transfer fuel to the settler. As the settler level is becoming dangerously low, they should now _____.	repeat all the steps they have taken	call out all hands for assistance	utilize a rubber impeller portable pump	reduce the vessel's speed and other plant loads
391	The water seal in a centrifuge, operating at normal speed, prevents the lube oil from discharging from the water outlet. Another function of the seal is to _____.	develop permanent emulsions with the lube oil	provide a means of 'washing' the oil as it passes through the bowl	keep the bowl at a temperature below that of the lube oil input	provide an area for separated water to pass and create a path to remove the water from the bowl
392	The water seal used in a tubular bowl centrifugal purifier is kept in the bowl during normal operation by _____.	an inclined port or passage rising from the bowl side towards the center	an inclined port or passage rising from the center towards the bowl side	baffled orifice	top cover
393	Thin tipping is a type of turbine blade design primarily used to _____.	increase the effective blade surface area without increasing blade weight	prevent any pressure drop from occurring through the moving blades in an impulse turbine	provide a means for mounting the shrouding on the blade tips	reduce losses due to blade tip leakage in reaction turbines
394	Thrust bearings are installed in main propulsion turbines to _____.	cancel centrifugal thrust force	control rotor axial movement	eliminate the need for dummy piston	maintain radial clearances
395	Thrust clearances indicated on a main propulsion turbine bearing clearance diagram are _____.	normal clearances for operation under routine steaming conditions	cold clearances to which the bearing was initially set	minimum clearances that indicate when bearing renewal is necessary	maximum clearances which should not be exceeded when the turbine is warmed up

ID #	Question	Choice A	Choice B	Choice C	Choice D
396	To accurately measure the amount of wear on a high speed pinion journal bearing with a bridge gage, you must _____.	be sure that the area of greatest wear is at 90° to the measuring pin	shift the journal to position the pinion off center in the bearing	raise the journal to a height equal to the oil clearance	roll the bearing shell until the wearing zone is at the bottom
397	To assure the main propulsion turbine bearings are receiving the proper lube oil supply, you should check the _____.	bull's-eye in the gravity tank overflow	lube oil temperature at the cooler outlet	flow through the sight glass at the bearing	lube oil strainer magnets
398	To determine the extent of lube oil system contamination you would _____.	watch for variations in the lube oil pump discharge pressure	observe the oil flow in the sight glasses	inspect the purifier for separated foreign matter	maintain a close watch on bearing temperatures
399	To minimize axial thrust in an impulse turbine, equalizing holes are located _____.	between the steam inlet and the front of the dummy piston	between the exhaust outlet and the front of the dummy piston	in each casing diaphragm	in each rotor wheel
400	To prevent damage to the turning gear mechanism, which of the following procedures must be carried out before the turning gear is engaged?	The brake on the first reduction worm shaft must be set.	The propeller shaft must be stopped and held stationary until the clutch is engaged.	The engine order telegraph must be on 'stop'.	The speed of the astern turbine must be reduced.
401	To properly sound a reserve feed water tank, you should use a/an _____.	innage sounding tape	chalk coated calibrated metal rod	manila line with an attached weight	fuel oil settler ullage tape
402	To raise vacuum on the main turbine unit, you should _____.	start the lube oil pump after starting the jacking gear	warm up and drain the main steam lines	pump the main condenser hot well dry	admit gland sealing steam to the turbine glands
403	To stop the rotor of a main turbine while underway at sea you should _____.	apply the prony brake	tighten the stern tube packing gland	secure all steam to the turbine	admit astern steam to the turbine after securing the ahead steam
404	To test an automatic low lube oil pressure trip on an idling turbo generator and at the same time prevent the chance of bearing damage, you should _____.	secure the steam supply valve to the throttle valve and observe the lube oil pressure reading when the throttle trips, while ensuring an adequate supply of oil with the hand or standby pump as the generator idles to a stop or drops below 3 psi .	ensure the standby lube oil pump, if so equipped, is properly lined up and set in the "auto" mode, or the hand pump is being operated and then actuate the emergency trip	close the generator steam throttle valve and then ensure a supply of oil through the hand or standby pump when the pressure drops to 5-6 psi .	actuate the overspeed trip, making a note at what pressure the oil is dumped from under the operating piston

ID #	Question	Choice A	Choice B	Choice C	Choice D
405	To test an automatic low lube oil pressure trip on an idling turbo generator and at the same time prevent the chance of bearing damage, you should _____.	actuate the overspeed trip, making a note at what pressure the oil is dumped from under the operating piston	close the generator steam throttle valve and then ensure a supply of oil through the hand or standby pump when the pressure drops to 5-6 psi	secure the steam supply valve to the throttle valve and observe the oil pressure as the throttle trips during the slowdown and ensure a supply of oil with the hand or standby pump when the pressure drops to 2-3 psi	ensure the standby lube oil pump, if so equipped, is properly lined up and set in the 'auto' mode, or the hand pump is being operated and then actuate the emergency trip
406	Turbine blade erosion is accelerated by _____.	high blade speed	high moisture content	high vacuum	all of the above
407	Turbine casing flanges are sometimes provided with a system of joint grooving to _____.	form a labyrinth seal between the casing halves	ensure perfect alignment of casing halves	inject sealing compound between the casing halves	increase contact pressure between the casing halves' flanges
408	Turbine lube oil suction strainer baskets have _____.	course perforations	fine perforations	frame lined with wire cloth	self-cleaning design
409	Turbine throttling losses can best be described as a loss of energy occurring _____.	as a result of friction created when steam passes through the nozzle block	whenever there is leakage of steam from one stage to another through the throttle valve packing gland	as a result of fluid friction caused by frequently throttling the turbine wheel and blade speed	as steam passes through the steam admission valve and there is a drop in pressure without the performance of work
410	Underway on watch in the fire room, the bridge reports black smoke coming from the stack. This would indicate _____.	fuel oil temperature too low	excessive steam atomization pressure	excessive air-fuel turbulence	All of the above
411	Upon assuming the watch on a steam ship while cargo operations are in progress with the main engine and reduction gear secured, you notice a very large increase in the reduction gear lube oil sump level from previous log book entries. What would be the most probable cause of this large increase in sump level?	Incorrect line-up of lube oil service pump bypass system.	A slight change in the vessel's trim.	Lube oil gravity tank is empty.	All of the above are correct.
412	Upon taking over the watch and the vessel is operating at sea speed, you find the D.C. heater water level to be dropping very slowly. Which of the following would you check to monitor this condition?	Verify that the main and auxiliary condenser hot well levels are normal.	Verify that the boiler water levels are not slowly increasing.	Verify the DC heater spill valve is not partially opened.	All of the above.

ID #	Question	Choice A	Choice B	Choice C	Choice D
413	Upon taking over the watch, while the vessel is at sea speed, you find the following conditions to exist. Which condition should be attended to first and why should this step be taken?	Excessive recirculation of condensate. Failure to properly adjust may cause an increase in condenser level leading to a decrease in condenser vacuum.	Salted up evaporator dumping to bilge. Must immediately be restarted to prevent insufficient quantities of distilled and potable water.	High level in fuel oil sludge tank. Necessary to pump contents to settler to prevent overflow of tank into the bilges.	Leaking air line to auxiliary exhaust live steam makeup valve actuator. Repair or place in bypass control to insure proper pressures in the auxiliary exhaust steam system.
414	Using a dry uncoated sounding rod or tape to measure the depth of water in a reserve feed water tank will _____.	always be 100% accurate	thoroughly contaminate the feed water	be very inaccurate	be satisfactory if a small amount of oil is floating on the surface
415	Vibration in main propulsion turbines could be caused by _____.	uneven heating of the rotors	high pressure steam in the first-stage	high vacuum in the main condenser	thrust developed in the turbines
416	Water can enter the lube oil system of a main propulsion turbine unit from _____.	leaky tubes in secured lube oil coolers	steam sealed turbine glands	vents on tanks and gear casings	all of the above
417	Water carryover in the steam entering a turbine could result in _____.	excessive rotor shaft wear	blade erosion	turbine overspeed	fracturing of the carbon packing
418	Water contamination in the main propulsion lube oil system is undesirable because _____.	the flash point of the lube oil is raised to a dangerously high level	water causes oil to clog in journal bearings	emulsification occurs with resultant loss of lubricating qualities	it reduces oil cooler effectiveness
419	Water is best removed from lubricating oil by _____.	silica gel cartridges	pressure filters	paper edge filters	centrifuging
420	Water removed through centrifugal force in the illustrated unit is displaced from the bowl through _____.	K	N	V	X
421	Water retained in the lube oil system of a main propulsion turbine installation is undesirable because it _____.	causes pitting of the gear teeth	causes the turbine to overspeed	raises the flash point of the oil to a dangerously high level	results in excessive cooling of bearing surfaces
422	What happens to the steam as it moves across the moving blades in a reaction turbine?	It gains velocity at constant pressure.	It creates an axial thrust in the direction of the steam flow.	It loses velocity at constant pressure.	It creates an axial thrust opposing the direction of steam flow.
423	What immediate action should you take if you are on watch and note 'zero' lube oil pressure for the operating main turbine?	Immediately increase cooling water flow to lube oil cooler.	Slow the turbine to minimum speed and watch the bearing temperatures.	Stop the shafts.	Shift strainers and gravity tanks.
424	What is generally found at the end of the low pressure turbine rotor of a cross-compound turbine arrangement?	Cruising turbine	High pressure turbine	Back pressure turbine	Astern turbine

ID #	Question	Choice A	Choice B	Choice C	Choice D
425	What is normally used to compensate for thermal expansion and contraction of the main turbine casing?	Flexible I-beam supports	Rigid mountings	Curved steam lines	Babbitt lined bearings
426	What is the FIRST thing that will happen if both the main and standby lube oil pumps fail on a geared main propulsion turbine operating at full sea speed?	Ahead throttle will close.	Lube oil sump will overflow.	Vacuum will be lost.	HP turbine bearings will overheat.
427	What is the significance of pinion deflection in the operation of reduction gears?	Pinion deflection causes unequal tooth loading.	Deflection is minimal because a longer pinion is more rigid	Deflection causes excessive wear at the center of the pinion.	Deflection causes excessive wear at both ends of the pinion
428	What is used to compensate for the increased possibility of blade vibration occurring with impulse turbine blading?	The decreased pressure drop across the blade due to the thin tip design.	Tuned vibration dampers.	Securing the blade tips with shrouding.	Seal stripping the groove within the turbine casing.
429	What should be done when foreign matter is found in a lube oil strainer?	Immediately stop the main engine and inspect all strainers.	Examine the foreign matter and determine its source.	Periodically open the drain valve to the sludge tank.	All of the above.
430	What should you do if you detect an abnormal vibration in the operating main propulsion turbine?	Notify the chief engineer and stand by the throttles.	Immediately slow the turbine until the vibration ceases.	Immediately stop the turbine.	Open the turbine drains until the vibration ceases.
431	What steps should be taken if excessive steaming and vigorous bubbling occurs in the first section of the drain inspection tank?	Systematically locate and isolate the faulty traps in the main steam piping to the turbo generator.	Locate and secure any unnecessarily opened steam trap bypass valve.	Secure the fuel oil heater currently in use.	All of the above are correct and each step should be taken promptly.
432	What steps should be taken if excessive steaming and vigorous bubbling occurs in the first section of the drain inspection tank?	Secure the fuel oil heater currently in use.	Locate and open any unnecessarily closed steam trap bypass valves.	Systematically locate and isolate any faulty traps in the contaminated steam system piping.	All of the above are correct and should be performed in the order as shown.
433	What steps should be taken if large quantities of fuel oil are found in the drain inspection tank?	Change over to the standby fuel oil heater.	Open steam trap bypass of the fuel oil heater that is on line.	Secure the lube oil purifier and its associated heater.	All of the above
434	What type of lube oil cooler is shown in the illustration?	Self venting	Shell-and-tube	Bundle and stack	Plate type
435	What type of strainer is used in a turbine lube oil system to remove metallic particles?	Magnetic basket strainer	Simplex filter	Metal edge strainer	Fuller's earth filter
436	What will be the FIRST thing to occur if both the main and standby lube oil pumps failed to operate on a geared main propulsion steam turbine operating at full sea speed?	Ahead throttle will close.	Lube oil sump will overflow.	Vacuum will be lost.	Shaft brake will engage.

ID #	Question	Choice A	Choice B	Choice C	Choice D
437	What will occur if the level of the atmospheric drain tank (fresh water collector) is permitted to continuously decrease while the vessel is underway?	The amount of condensate pumped to the contaminated evaporator will decrease.	The pressure of the contaminated steam system will drop once the tank is empty.	Make-up water will be automatically added to the tank via a vacuum drag arrangement.	There is a possibility of losing vacuum in the main condenser.
438	What will occur if the level of the atmospheric drain tank, (fresh water drain collector) is permitted to continuously rise while the vessel is underway?	The tank will overflow causing a significant loss of potable water.	The pressure of the contaminated steam system will rise when the tank becomes full.	There is a definite possibility of the tank overflowing, causing loss of distilled water.	There will be an increase of vacuum in the main condenser within a short period of time.
439	When a high pressure turbine is operating at sea speed, the pressure of the steam leaking through the shaft gland packing may be slightly higher than the pressure setting of the gland seal regulator. In this situation, the excess steam at the regulator is directed to the _____.	gland exhaust condenser	excess steam condenser	main condenser	auxiliary exhaust system
440	When a lube oil purifier has been cleaned, but a small amount of sludge remains in one spot of the bowl side, the _____.	seal will be gradually lost after being placed into operation	through put will be reduced	temperature of the oil input will have to be lowered	dirty oil pump discharge pressure will need to be increased
441	When a reference input signal from the bridge to the engine room takes place, the signal is inverted in the amplifiers and function generators. A negative signal from the amplifier, shown in the illustration, labeled "M", will result in a _____.	positive signal to the ahead hydraulic actuator pilot motor	negative signal to the ahead hydraulic actuator pilot motor	positive signal to the astern hydraulic actuator pilot motor	negative signal to the astern hydraulic actuator pilot motor
442	When a sudden increase in pressure occurs in a forced lubrication system, you should check for a _____.	loss of oil flow across one of the bearings	clogged lube oil pump suction	ruptured tube in the lube oil cooler	high lube oil sump level
443	When a turbine bearing shows signs of overheating, you should _____.	stop the turbine	immediately reduce speed	increase the lube oil pump discharge pressure	increase the cooling water supply to the lube oil cooler
444	When a turbine is in operation, a rotor position micrometer is used to determine any change in rotor _____.	radial position relative to the casing	radial position relative to the micrometer	axial position relative to the casing	axial position relative to the micrometer
445	When a turbine rotor is not rotating during maneuvering, the heat tends to be concentrated at the _____.	turbine bleed lines	exhaust trunk	top of the turbine	casing joints
446	When air becomes trapped in the hydraulic fluid of a steering system, the _____.	rudder will respond erratically	hydraulic ram movement will overspeed	sight glass will show bubbles	ram relief valves will lift

ID #	Question	Choice A	Choice B	Choice C	Choice D
447	When an oil purification centrifuge loses a portion of its seal, the oil can then be discharged through the heavy phase discharge port. This is partly a result of greater _____.	centrifugal force being developed on the oil near the interface	centripetal force being developed on the oil near the interface	centrifugal force being developed on the water seal at the side of the bowl	centripetal force being developed on the water seal at the side of the bowl
448	When fitting new carbon ring packing on a turbine rotor shaft, carefully filing the ends of the segments will _____.	reduce the ring segment end clearance	reduce the clearance between the assembled ring segments and shaft	reduce the possibility of scoring the shaft	provide for a greater oil wedge pressure
449	When preparing to get underway and the jacking gear has been disengaged, the main turbine rotor should NOT be allowed to remain stationary for more than 3 minutes because _____.	uneven heating from gland seal steam can cause distortion of the rotor	the turbine drain lines can fill with condensate	main condenser vacuum will drop rapidly without steam flow through the main unit	with no rotor movement, the journal bearings may overheat due to reduced lube oil flow
450	When relieving the watch in the fire room, you should first check the _____.	boiler water drum level	boiler steam drum temperature	fuel pressure to the burners	port and starboard settling tank levels
451	When relieving the watch in the fire room, you should first check the boiler steam pressure and _____.	boiler water level	prepare to blow tubes	stack temperature	port and starboard settling tanks
452	When relieving the watch in the fire room, you should first check the boiler water level and _____.	port and starboard settling tank temperatures	condition of furnace fires	steam atomization to the mechanical atomizers	feed pump lube oil level
453	When relieving the watch in the fire room, you should first check the boiler water level and _____.	the port and starboard settling tank temperatures	make up feed tank level	empty all oil drip pans	the condition of the furnace fires
454	When relieving the watch in the fire room, you should first check the boiler water level and then _____.	check the fuel pressure to the burners	empty all oil drip pans	prepare to blow tubes	check port and starboard settling tank levels
455	When relieving the watch in the fire room, you should first check the fuel pressure to the boiler and _____.	port and starboard settling tank levels	economizer outlet temperature	empty all oil drip pans	boiler water level
456	When securing a main propulsion turbine equipped with carbon packing glands, the vacuum should always be broken before securing the gland seal steam because _____.	the turbine rotor expands faster than the gland casing	cold air rapidly entering the gland may result in damage to the carbon segments and sealing surfaces	loop seal will flood the after condenser	gland seal leak off lines will flood with water
457	When securing the main engine, which of the listed procedures should be carried out to remove or reduce condensation from the interior of the main reduction gear casing?	Circulate oil until oil and gear casing have reached ambient temperatures.	Continue to operate the lube oil purifier until there is no water discharge.	Continue to operate the lube oil cooler and rotate the engine with the turning gear.	All of the above.

ID #	Question	Choice A	Choice B	Choice C	Choice D
458	When standing watch at sea, steaming full ahead, adding large amounts of make-up feed water would also have a tendency to change which of the following parameters?	Lower DC heater temperature.	Decrease DC heater level.	Increase air ejector condenser main condensate outlet temperature.	All of the above.
459	When standing watch at sea, steaming full ahead, adding make-up feed water from reserve feed double bottom tanks would also have a tendency to change which of the following parameters?	Increase DC heater temperature.	Decrease DC heater level.	Decrease air ejector condenser main condensate outlet temperature.	Increase main condensate discharge temperature.
460	When standing watch at sea, steaming full ahead, adding make-up feed water would also have a tendency to change which of the following parameters?	Increase DC heater pressure.	Increase DC heater level.	Increase boiler water level.	All of the above.
461	When standing watch at sea, steaming full ahead, adding make-up feed water would also have a tendency to change which of the following parameters?	Decrease DC heater pressure.	Increase DC heater level.	Increase condensate depression.	All of the above.
462	When standing watch at sea, steaming full ahead, reducing the boiler forced draft pressure would also have a tendency to correct which discrepancy?	High superheat temperature.	Black smoke from the stack.	Low boiler pressure.	High fuel oil temperature.
463	When standing watch at sea, steaming full ahead, reducing the boiler forced draft pressure would also have a tendency to correct which discrepancy?	Low superheat temperature.	High stack temperature.	High atomizing steam pressure.	High DC heater level.
464	When standing watch at sea, steaming full ahead, reducing the boiler forced draft pressure would also have a tendency to correct which discrepancy?	Low fuel oil temperature.	High desuperheat steam pressure.	White smoke coming out from the stack.	Low furnace air pressure.
465	When starting a turbo generator in an automated plant, you must provide lube oil pressure to the unit by means of _____.	a line from the other generator	a line from the gravity tank	the main lube oil pump	the hand operated or auxiliary lube oil pump
466	When starting a turbo generator in an automated plant, you must provide external lube oil pressure to the unit for the purpose of _____.	energizing the generator overspeed trip	pressurizing the power piston to raise the nozzle lifting beam	opening the exhaust dump valve	pressurizing the power piston to lower the nozzle lifting beam
467	When starting a turbo generator in an automated plant, you must provide lube oil pressure to the unit by means of a/an _____.	auxiliary lube oil pump	line from the other generator	line from the gravity tank	line from the main lube oil pump
468	When starting a turbo generator, you must initially provide external governor lube oil pressure to _____.	energize the overspeed trip	raise the nozzle valve lifting beam	energize the gland seal regulator	open the turbine exhaust valve

ID #	Question	Choice A	Choice B	Choice C	Choice D
469	When starting a turbo generator, you must provide lube oil pressure to the governor power piston by means of _____.	a line from the other generator	a line from the gravity tank	the main lube oil pump	the hand operated or auxiliary lube oil pump
470	When the flow of oil admitted to a disk-type centrifugal purifier is in excess of its designed capacity, which of the following conditions will usually occur?	The oil will discharged through the heavy phase discharge port.	The speed of the centrifuge will increase.	All water will be retained by the purified oil being discharge.	Oil will be present in the water sealing line to the bowl.
471	When the temperature of the main turbine lubricating oil is lowered, an increase will occur in the _____.	pour point	concentration of contaminants	viscosity	flash point
472	When there is a sudden increase of lubricating oil pump discharge pressure in a force feed lubricating system, you should FIRST check the _____.	pump relief valve	lubricating oil cooler outlet temperature	lubricating oil flow from the bearings	lubricating oil suction strainers
473	When there is a sudden increase of lubricating oil pump discharge pressure in a force feed lubricating system, you should FIRST check the _____.	pump relief valve	lubricating oil sump level	lubricating oil flow from the bearings	lubricating oil suction strainers
474	When turbine rotor shafts extend through the casing, an external source of sealing steam is used in conjunction with labyrinth packing to _____.	maintain the rotor journal temperature	seal the casing during periods of low casing pressure	seal the casing during periods of high casing pressure	provide a constant flow to the gland leak off condenser
475	When used as a separator, a centrifugal purifier may lose its seal and cause _____.	water to contaminate the lube oil	the purifier pump to lose suction	water flow from the oil discharge	oil flow from the water discharge
476	When water is removed from lube oil passing through a centrifugal purifier, the water removed will _____.	be retained in the bowl	force the diameter of the oil column within the bowl to be narrowed	displace water from the heavy phase discharge port, but of an amount less than that removed from the oil	displace an equal amount of water from the bowl seal
477	Where are moisture shields located in a main propulsion steam turbine?	Around throttle valve stems	At the steam strainer inlet	At the inner stage diaphragms	After the last stage of the ahead rotor blading
478	Where reaction turbine blading is fitted with shrouding of "end tightened" design, which of the following conditions will be the most critical to efficient turbine operation?	Rotor axial position	Diaphragm clearance position	Rotor radial position	Rotor casing sliding foot position
479	Where reaction turbine blading is fitted with shrouding of "end tightened" design, which of the following operating parameters must be carefully monitored for efficient turbine operation?	Rotor axial position	Diaphragm clearance position	LP bleed steam pressure	HP bleed steam pressure
480	Which component of a Kingsbury thrust bearing assembly transmits the thrust from the line shaft to the oil film and shoes?	Collar	Lower leveling plate	Upper leveling plate	Base ring

ID #	Question	Choice A	Choice B	Choice C	Choice D
481	Which condition could cause a low level in the deaerating feed water tank (DC heater) as the vessel is increasing from maneuvering to sea speed?	Maintaining the water levels of both boilers excessively high	Excessive recirculation of main condensate	Insufficient flow of make-up feed to the condenser	All of the above
482	Which condition would cause a dangerously low level in the deaerating feed water tank (Direct Contact) heater during maneuvering?	Excessive dumping of feed water to the distilled water tank via the automatic dump valve.	Excessive recirculation of condensate to the drain inspection tank.	Improper operation of the auxiliary exhaust live steam dump valve.	Open bypass valve of the automatic/pneumatic makeup valve assembly.
483	Which condition would cause a dangerously low level in the deaerating feed water tank (Direct Contact) heater as the vessel is increasing from maneuvering to sea speed?	Excessive dumping of feed water to the drain inspection tank via the automatic dump valve	Excessive recirculation of condensate to the drain transfer tank	Internal collapse of a rubber expansion joint located in the condensate pump suction line	Clogged "Y" strainer at the condensate inlet of the pneumatically operated condensate recirculating valve assembly
484	Which condition would cause a dangerously low level in the deaerating feed water tank (Direct Contact) heater as the vessel is increasing from maneuvering to sea speed?	Excessive dumping of feed water to the drain inspection tank via the automatic dump valve.	Excessive recirculation of condensate to the drain transfer tank.	Improper operation of the auxiliary exhaust live steam dump valve.	Clogged "Y" strainer at the air supply of the pneumatically operated condensate makeup valve assembly.
485	Which condition would cause a high level in the deaerating feed water tank (DC heater)?	Excessive dumping of feed water to the distilled water tank.	Excessive recirculation of condensate to the auxiliary condenser.	Temporarily operating both boilers at below normal water levels.	Improper operation of the air ejector loop seal.
486	Which condition would cause an excessively high level in the deaerating feed water tank (DC heater)?	Excessive dumping of feed water to the distilled water tank.	Excessive recirculation of condensate to the auxiliary condenser.	Improper operation of the condensate makeup valve.	Improper operation of the air ejector loop seal.
487	Which condition would cause an excessively high level in the deaerating feed water tank (Direct Contact) heater during maneuvering?	Excessive dumping of feed water to the distilled water tank.	Excessive recirculation of condensate to the auxiliary condenser.	Improper operation of the live steam makeup valve supplying the auxiliary exhaust system.	Open bypass valve to the automatic makeup valve assembly.

ID #	Question	Choice A	Choice B	Choice C	Choice D
488	Which following condition could occur if the distilled water tank level indicator has been giving an erroneously high reading?	It is possible to lose vacuum if the level drops below the make-up feed piping connection.	Past logbook entries must all be changed to indicate actual amounts.	The tank may overflow in the engine space causing unnecessary damage to electrical equipment.	All of the above are correct.
489	Which immediate action should you take when the temperature of one line shaft bearing increases above its normal operating temperature?	Stop the unit and carefully inspect the bearing.	Stop the unit and replace the bearing.	Check the bearing for proper lubrication.	Check for proper water circulation to the lube oil coolers.
490	Which of the bearings listed is used in some turbines to limit axial movement?	Pivoted-shoe type thrust bearing	Self-adjusting, spherically-seated, self-aligning bearing	Journal bearing	Cylindrical bearing
491	Which of the components listed is indicated by the "X" shown in the illustration?	Strainer	Sight glass	Drain	Branch line
492	Which of the conditions listed could cause an oil flow sight glass, of a main turbine bearing, to be completely filled with oil?	An increase in oil temperature.	A restriction in the oil drain line to the sump.	Excessive air trapped in the lube oil system.	Increasing the amount of oil through the gravity tank overflow line.
493	Which of the conditions listed is the most common source of torsional vibration in a geared turbine drive?	Gear excited critical vibrations	Propeller excited vibrations	Turbine rotor imbalance	Changing shaft thrust
494	Which of the conditions listed should be immediately reported to the engineering officer on watch?	Steam leaving the vent of the gland exhaust condenser.	Lube oil passing through the bull's eye of the gravity tank overflow line.	Oil in the drain inspection tank.	Water trickling in through the stern gland.
495	Which of the conditions listed would cause the stern tube lube oil head tank level to decrease?	An increase in sea water temperature.	The entry of sea water into the system.	An increase in the stern bearing operating temperature.	A worn or damaged stern tube seal.
496	Which of the conditions listed would indicate water carryover to a turbine?	Loss of condenser vacuum.	High steam temperature in the high pressure turbine steam chest.	Decreased condensate salinity.	Noise and vibration in the turbine.
497	Which of the coupling types listed is shown in the illustration?	Claw	Pin	Gear	Solid
498	Which of the devices listed are used to rigidly mount reduction gear bearings in their housings?	Keyways and keys	Spherical housings	Dowels or locking screws	Notched construction
499	Which of the devices listed can be used to determine bearing wear on a main propulsion turbine bearing?	Bridge gage	Soft lead wires	Micrometer depth gages	All of the above.

ID #	Question	Choice A	Choice B	Choice C	Choice D
500	Which of the devices listed is commonly used to compensate for the expansion and minor misalignments occurring between the main turbine rotor and the reduction gear?	Sliding sleeve	Gear type flexible coupling	Expansion gear	Quill shaft
501	Which of the devices listed is found on an LP main propulsion steam turbine casing?	Duplex set of relief valves	Sliding beam	HP turbine bypass valve	Sentinel valve
502	Which of the devices listed is generally used to engage the main engine turning gear to the high pressure turbine high-speed pinion?	Manually operated band brake	Manually operated sliding jaw clutch	Sleeve coupling	Quill shaft
503	Which of the devices listed is used to convert thermal energy into rotor kinetic energy in a reaction turbine?	Nozzle diaphragms	Labyrinth nozzles	Moving blades	None of the above
504	Which of the devices listed is used to convert thermal energy to useful mechanical work?	Turbine	Condenser	Air ejector	Each of the above
505	Which of the effects listed describes the changes in the velocity and pressure of the steam as it passes through a nozzle?	Velocity increases and pressure increases	Velocity increases and pressure decreases	Velocity decreases and pressure increases	Velocity decreases and pressure decreases
506	Which of the features listed, regarding the Kingsbury thrust bearing, prevents the base ring from turning and secures it to its housing?	Pin	Dowel	A combination of pin and dowel	Keyed construction
507	Which of the flexible coupling types listed is used in most turbine reduction gear installations?	Friction clutch	Gear	Bend	Flange
508	Which of the following bearings is designed to take loads applied to the axis of the shaft?	Radial	Spring	Strut	Thrust
509	Which of the following conditions is indicated by oil flowing through a lube oil gravity tank overflow bulls-eye?	Excessive oil is stored in the gravity tank.	Sufficient oil flow is being supplied to the gravity tank.	Insufficient oil is being pumped to the gravity tank.	Turbine bearing failure has occurred.
510	Which of the following conditions is indicated by the necessity of providing excessive gland sealing steam pressure to maintain the normal operating conditions of the main propulsion unit?	Vacuum leak in the condenser shell.	Flooded main condenser hot well.	Worn or damaged labyrinth packing.	Restriction in the gland leak off piping.
511	Which of the following conditions is the engineer's FIRST warning that the main lube oil pump has stopped?	Gravity tank low level alarm will sound.	Lack of oil in the overflow bull's-eye is observed.	High main engine bearing temperatures will be noted.	Low main sump level alarm will sound.
512	Which of the following conditions may exist if you detect an excessive amount of metal particles on a main engine lube oil strainer magnet?	Journal bearing damage.	Turbine shrouding damage.	Reduction gear damage.	Main shaft bearing damage.
513	Which of the following construction methods would apply to the babbitt lined, split-type, reduction gear bearings?	They are always mounted with the split in a horizontal plane.	They are secured in their housing so pressure points will occur at the joint faces.	They are split into four equal sized segments.	They are rigidly mounted and doweled in their housings.

ID #	Question	Choice A	Choice B	Choice C	Choice D
514	Which of the following descriptions best describes a basic Rateau turbine stage?	One set of nozzles and two rows of moving blades.	One set of nozzles and one row of moving blades.	Two sets of nozzles and two rows of moving blades.	Two sets of nozzles and one row of moving blades.
515	Which of the following designs is an essential feature of the Rateau type turbine?	A large pressure and temperature drop occurring in the first stage.	The use of alternate rows of fixed and moving blades.	The use of a velocity-compounded impulse stage installed at the high pressure end of the turbine.	Two or more simple impulse stages aligned in tandem in one casing.
516	Which of the following enables a Kingsbury, or any pivot shoe type thrust bearing, to bear a much greater load per square inch of working surface than parallel surface bearings?	The thickness of the filler piece behind the pivotal-shoes is adjusted to obtain a more accurate fit.	Clearances are automatically adjusted to the correct value when wear occurs.	The shoes tilt slightly thereby allowing the formation of a wedge shaped oil film under a thrust load.	The shoes pivot, thus remaining parallel with the collar when thrust loads are applied.
517	Which of the following factors determines the type of construction used for gear hubs in shipboard reduction gear units?	Size of the gear wheel	Type of reduction gear unit	Type of ship using installation	Type of steam turbine installation
518	Which of the following is used to hold the poppet valves closed in a turbo generators nozzle control speed regulator?	Lifting beam	Springs	Steam pressure	Oil pressure
519	Which of the following lube oil system lines generally includes an illuminated sight glass (bull's-eye)?	Lube oil pump suction	Lube oil pump discharge	Gravity tank discharge	Gravity tank overflow
520	Which of the following methods is used to counter axial thrust in a single flow reaction turbine?	A dummy piston and cylinder at the turbine inlet end	Pressure equalizing holes in the individual rotor wheels	Labyrinth packing	Carbon packing
521	Which of the following methods is used to lubricate main propulsion turbine reduction gears?	The gears run through an open oil sump and oil is carried along on the gear teeth.	Oil is sprayed through nozzles at the point of gear mesh.	Oil is pressure fed through internal drilled passages which force oil to the gear's periphery.	Oil rings in channels outside the gears dip into oil in the sump and carry it to the gear teeth.
522	Which of the following methods is used to securely fasten the babbitt lining of a reduction gear bearing to its shell?	The babbitt is centrifugally spun into the bearings or cast under a pressure head.	The babbitt is relieved in way of the split and held in place by locking pins.	The babbitt is securely bonded to the shell by the pressure of the hydrodynamic oil wedge.	The babbitt has a crescent shaped pocket cast symmetrically about the bearing split.

ID #	Question	Choice A	Choice B	Choice C	Choice D
523	Which of the following methods provides for axial movement in a gear type flexible coupling?	External teeth on the floating member are allowed to slide between internal teeth on the shaft rings.	Each gear is allowed to slide on its shaft between retaining collars.	A coupling permits free relative radial motion of the gear and pinion, thereby allowing axial movement.	Opposing helices act to balance axial thrust with the coupling.
524	Which of the following occurs in a single stage of a simple impulse turbine?	The steam experiences a single pressure drop through the nozzles and impinges on a row of moving impulse blades.	Steam velocity and pressure decreases through the nozzles and impinge on a row of moving reaction blades.	Steam expands through the nozzles and impinges on a row of reaction blading causing an additional pressure drop.	Steam velocity decreases and pressure increases through the nozzles and impinges on a row of impulse blades.
525	Which of the following operational practices is helpful in avoiding the accumulation of condensate in the main reduction gear casing?	Always ensure that the lubricating oil pressure is 14-17 psi when operating in unusually cold waters.	The temperature of the lubricating oil should not exceed the gear manufacturer's recommendation when the unit is operating at full load.	After the main unit is secured, lubricating oil should be circulated until the temperature of the oil and reduction gear casing approximates the engine room temperature.	Avoid applying gland sealing steam to the low pressure turbine until you are ready to start up the first-stage air ejector.
526	Which of the following problems can occur from improper main turbine warm-up?	Distortion of the rotor	Rubbing of blades	Uneven casing heating	All of the above
527	Which of the following problems is likely to occur if the lube oil level in the sump is too high?	Aeration of the oil.	A rise in oil temperature.	The main engine could not be operated at full speed.	All of the above.
528	Which of the following reaction turbine components listed converts thermal energy into kinetic energy.	Fixed and moving blades	Fixed blades only	Moving blades only	None of the above
529	Which of the following reaction turbine components listed converts thermal energy into kinetic energy.	Fixed and moving blades	Fixed blades only	Moving blades only	nozzle diaphragms
530	Which of the following represents one of the designed functions of reduction gears?	Change rotary motion into linear motion.	Combine multiple speed inputs into a single low speed output.	To amplify low speed to high speed.	Utilize a single engine input and convert to multiple propeller output.
531	Which of the following statements about gravity type lube oil systems is correct?	Any lube oil pump failure causes immediate damage to turbine bearings.	The discharge from the gravity tanks flows to the lube oil pump suction.	Gravity tank overflow lines are lead directly to the lube oil sump.	Gravity tanks are fitted with an overflow alarm.

ID #	Question	Choice A	Choice B	Choice C	Choice D
532	Which of the following statements best describes the actions occurring to the oil as it flows through a disk type centrifugal purifier?	The purified oil is only thrown outward and away from the spindle of the machine.	Water, along with most of the dirt and sludge, is discharged past the discharge ring, located at the top of the bowl.	Most of the dirt and sludge is forced to accumulate on the vertical surfaces of the bowl.	As the dirty oil flows down through the distribution holes in the disks, the high centrifugal force causes the water to move outward.
533	Which of the following statements concerning the design of balanced throttle valves is correct?	They commonly use a conventional valve disc and a balance piston.	They commonly use two parallel seats and a balance cylinder.	Both ahead and astern valves normally have a positive opening tendency.	The ahead throttle valve normally utilizes a guarding valve.
534	Which of the following statements concerning the operation of a lube oil purifier is correct?	They should be operated as clarifiers for optimum moisture removal.	They should be operated at maximum design speed and recommended operating capacity.	They should be operated as slowly as possible to ensure a long service life.	They should not be primed with water when operated as a separator.
535	Which of the following statements defines the term 'axial float' in reference to reduction gears?	Idler gears reduce axial loads when reversing rotation	The gears cut with a single helix have axial thrust eliminated.	The gears are capable of free radial motion	The gears are capable of free axial motion
536	Which of the following statements defines the term 'axial float' in reference to reduction gears?	The gears are not subject to excessive tooth loads due to mismatching of the journal bearing halves.	The gears cut with a single helical profile have axial thrust eliminated.	The gears are capable of free motion, neither supporting nor being supported radially by other gears.	A pinion is capable of free axial motion, mating with a fixed double helical gear which establishes its position in the gear train.
537	Which of the following statements describes how the main propulsion turbine overspeed relay initiates closing of the throttle valve?	Excessive centrifugal force causes a spring loaded weight to trip a valve latch.	Excessive centrifugal force causes spring loaded fly balls to actuate a control lever.	Excessive speed causes an oil pump to develop sufficient pressure to open a spring loaded relay valve which tends to close the steam control valve.	Excessive speed causes an increase in lube oil control temperature which actuates a solenoid oil dump valve.
538	Which of the following statements describes the function of a ship's propulsion plant main reduction gear thrust bearing?	Support the weight of the reduction gears.	Absorb the transmitted power when radial thrust is developed.	Absorb the axial thrust transmitted through the shaft from the propeller.	To absorb only the thrust developed by the high pressure turbine.

ID #	Question	Choice A	Choice B	Choice C	Choice D
539	Which of the following statements is correct regarding axial thrust in a high pressure velocity-compounded turbine?	Most of the thrust produced is counter balanced by the action of a dummy piston.	Only a small portion of the thrust produced is counter balanced by the action of a dummy piston.	The thrust is minimized by equalizing holes drilled in the turbine wheels.	The thrust is transmitted to and absorbed by the high speed pinion and gear.
540	Which of the following statements is correct regarding the selection of the proper size ring dam for a tubular-type lube oil purifier?	The size ring dam used depends on the viscosity of the oil being purified.	While all ring dams have the same inside diameter, the outside diameters vary.	Ring dams of larger sizes are indicated by smaller numbers.	Satisfactory purification is obtained when the ring dam is the largest size possible, and no oil is present at the water discharge.
541	Which of the following statements is true concerning lube oil coolers?	The temperature of the oil is less than that of the cooling water.	The pressure of the oil is less than that of the cooling water.	The pressure of the oil is greater than that of the cooling water.	Magnets are installed in the tube sheets to remove metal particles.
542	Which of the following statements is true concerning the centrifuging of lubricating oil?	Centrifuging is more effective with inhibited oils than straight mineral oils.	Centrifuging is more efficient when the oil is preheated prior to centrifuging.	Silicones are water soluble and easily removed by centrifuging.	Centrifuging will purge the oil of various contaminants, including acids and alkalis.
543	Which of the following statements is true concerning the coupling shown in the illustration?	It allows for any misalignment between the main turbine and the second reduction gear.	It is commonly used between the first reduction pinion and the second reduction gear.	It is suitable for use on small auxiliary turbines only.	It can be used to connect the main turbine to the high-speed pinion.
544	Which of the following statements is true concerning the lube oil system shown in the illustration?	The gravity tank directly provides the normal supply of oil to the turbines and gears.	The gravity tank overflow line leads directly to the lube oil sludge tank.	The three-way temperature control valve bypasses cooling water around or through the lubricating oil cooler to maintain the desired oil temperature.	The drains from lube oil coolers can be directed back to the main sump, the sludge tank or the lube oil purifier.
545	Which of the following statements is true concerning the turbine shown in the illustration?	The low pressure turbine is designed with reaction type stages	The astern element is of the Curtis type consisting of two three-row stages	A steam deflector is provided between the astern element and the ahead stages of the LP turbine.	The ahead rotor can be classified as a helical flow, Parsons type turbine

ID #	Question	Choice A	Choice B	Choice C	Choice D
546	Which of the following statements is true concerning the turning gear rotor arrangement shown in the illustration?	The second reduction worm gear always rotates whenever the turning gear motor is in operation; regardless of the position of the engaging handle.	The turning gear motor coupling is engaged by the locking device.	In order for the 'turning gear engaged' indicating lamp to be lit, the switch must be of the normally closed type.	The first reduction gear meshes directly with the bull gear.
547	Which of the following statements is true regarding lube oil coolers used for main steam propulsion systems?	Regulating the inlet water flow to a lube oil cooler may result in air binding of the water side.	A lube oil cooler is typically constructed as a cross-flow type heat exchanger.	The coolers may be bypassed when operating in warm sea water temperatures.	The lube oil usually flows thru the tubes and the cooling water around the tubes.
548	Which of the following statements represents an example of a throttling loss in a turbine?	Friction as steam passes over the walls of the nozzles.	Steam leaving the last stages of the turbine.	Steam passing through a steam admission valve.	Steam leaking over the tips of fixed and moving blades.
549	Which of the following statements represents the function of the center groove machined on a double-helical gear?	It allows the gears slight axial movement without gear damage.	It allows a path for oil to escape regardless of the direction of rotation.	It prevents excessive axial thrust loads from developing on the teeth.	It is used to distribute oil to the gear teeth.
550	Which of the following statements represents the function the nozzle assembly performs in an impulse turbine?	Converts the steam's thermal energy into kinetic energy by increasing its velocity and directing it against the rotor blades.	Provides an area where the steam is prevented from expanding prior to being directed against the rotor blades.	Increases the velocity of the steam without a pressure drop across the diaphragm.	Converts the potential energy of steam into thermal energy by increasing its pressure and directing it against the turbine blades.
551	Which of the following statements represents the principle of operation of the Kingsbury type thrust bearing?	A flat film of oil is more readily formed and maintained than a wedge shaped oil film.	A flat film of oil can carry heavier loads than a wedge shaped oil film.	A wedge shaped film of oil absorbs less heat than a flat oil film.	A wedge shaped film of oil is more readily formed and maintained than a flat oil film.
552	Which of the following statements represents the reason why the babbitt of a turbine journal bearing is relieved at the point of oil entry along the horizontal joint?	To prevent oil from backing up in the supply line.	To permit oil to discharge through the rear of the bearing.	To prevent hydraulic pressure buildup when the journal rotates.	To permit the rotor journal to draw oil around the shaft.
553	Which of the following statements represents the significance of the differential pressure existing between the nozzle block and steam chest of a turbo generator equipped with a lifting beam mechanism?	The pressure differential necessitates the use of a special balance piston.	The pressure differential eliminates the possibility of valve binding in the lifting beam.	The pressure differential requires the installation of a special biasing spring to open the valves.	The pressure differential assists in seating the valves when the lifting beam is lowered.

ID #	Question	Choice A	Choice B	Choice C	Choice D
554	Which of the following statements would best describe the purpose of operating the hand lube oil pump on an auxiliary turbo-generating unit?	It supplements the main lube oil pump flow while paralleling the generators.	It empties the governor control reserve prior to shutting down.	It assists in opening the governor control valve while starting the unit.	It permits the changeover of lube oil filters.
555	Which of the following types of bearing lubrication schemes can carry the highest unit loading?	Ring lubricated	Disk lubricated	Pressure lubricated	Oil whip lubricated
556	Which of the following types of bearings are used as line shaft bearings?	Ring-oiled, babbitt-faced, spherical seat, shell	tapered roller, split type radial	Segmental, pivoted-shoe thrust	Rigidly mounted, radial sleeve
557	Which of the following types of bearings are used for the reduction gears in a marine steam turbine installation?	Babbitt lined split shell	Lignum vitae lined precision	Bronze lined cutlass	Sintered bronze bushings
558	Which of the following types of bearings is designed to limit end movement and carry loads applied in the same direction as the shaft axis?	Rigidly mounted reduction gear bearing	Segmental pivoted-shoe thrust bearing	Self-aligning radial bearing	Spherically-seated radial bearing
559	Which of the following types of main propulsion turbines is most likely to require a dummy piston or cylinder arrangement to counterbalance axial thrust?	Double flow impulse turbine.	Multistage impulse turbine.	Double flow reaction turbine.	Single flow reaction turbine.
560	Which of the following types of main propulsion turbines is most likely to require a dummy piston or cylinder arrangement to counterbalance axial thrust?	Double flow impulse turbine	Multistage impulse turbine	Double flow reaction turbine	Single flow reaction turbine
561	Which of the following would cause the dowel or locking lip of a split-type, precision insert, main bearing to shear and allow the bearing to rotate with the journal?	Unequal torque to any two adjacent bearing bolts	Excessive bearing bolt torque	Insufficient bearing crush	Short periods of above normal operating speeds
562	Which of the following would contribute to the formation of an oil and water emulsion, in addition to acid formation?	Aeration, agitation, and heat	Solid insoluble particles, aeration, and heat	Water and solid insoluble particles	Water, agitation, and heat
563	Which of the journal bearings listed most easily accommodates the minor turbine shaft misalignment?	Ball bearings	Roller bearings	Spring bearings	Spherically seated bearings
564	Which of the listed actions will occur when there is an increase in load on a ship service generator equipped with a centrifugal type hydraulic governor?	The governor weights move outward.	The operating piston is forced to move lower.	More oil will enter the operating cylinder (O).	Steam flow to the turbine decreases.

ID #	Question	Choice A	Choice B	Choice C	Choice D
565	Which of the listed conditions could occur if during start-up the rotor illustrated shifts radially?	The teeth in segments "A" could be sheared off as they rubbed against the sides of the machined rotor lands.	No appreciable damage would result as the segments "A" would simply move outward against spring compression.	Enough frictional heat would be produced, even in that short period of time, to cause distortion and ultimate scoring of the shaft.	None of the above as the operator would be fore warned of this situation through the action of the squealer ring "D".
566	Which of the listed items are the two most commonly used opposing forces involved in the operation of a constant pressure boiler feed pump governor?	Steam inlet pressure and pump discharge pressure.	Pilot valve steam pressure and control valve spring pressure.	Steam inlet pressure and adjusting spring tension.	Pump discharge pressure and adjusting spring compression.
567	Which of the listed operational checks should be made "continuously" on the main propulsion reduction gears?	Check radial bearing wear.	Inspect alignment between gears and turbine.	Check teeth for pitting and scuffing.	Check bearing lube oil temperatures.
568	Which of the listed parts illustrated in the turbo generator governing system, provides the follow-up to prevent the nozzle valves from cycling between the fully open and fully closed positions, with each variation in turbine speed?	D	O	H	E
569	Which of the listed parts of a Kingsbury thrust bearing tilts to permit the formation of a wedge shaped film of oil?	Collar	Base ring	Dowel disk	Shoes
570	Which of the listed parts shown in the illustration of the turbo-generator governing system, provides the follow-up motion to prevent the nozzle valves from cycling between the fully open and fully closed positions with each variation in turbine speed?	Synchronizer	Operating cylinder	Main speed governor	Restoring linkage
571	Which of the listed procedures should be followed when raising vacuum on the main propulsion plant prior to getting underway?	Start the condensate and circulating pumps, engage the turning gear, start the lube oil system, then start the first-and second-stage air ejectors and the gland sealing.	Start the condensate and circulating pumps, start the lube oil system, start the air ejectors and the gland sealing system, and engage the turning gear.	Start the lube oil system, engage the turning gear, start the condensate and circulating pumps, start the gland sealing system and second-stage air ejector.	Start the lube oil system, start the second-stage air ejector and the gland sealing system, start the condensate and circulating pumps, and start the turning gear.
572	Which of the parts listed for a reaction turbine serve the same function as the nozzles of an impulse turbine?	Fixed nozzles	Moving nozzles	Moving blades only	Fixed blades and moving blades

ID #	Question	Choice A	Choice B	Choice C	Choice D
573	Which of the statements listed applies to the quill shaft shown in the illustration?	It provides torsional rigidity to help maintain alignment between gear train and the turbine rotor.	It permits axial movement between the high speed gear and low speed pinion.	It compensates for high speed pinion radial misalignment.	It absorbs the axial thrust generated by the meshing gears.
574	Which of the steam losses listed would be associated with a multistage impulse turbine rather than a multistage reaction turbine?	Radiation loss	Leaving loss	Blade and nozzle loss	Diaphragm packing loss
575	Which possible condition has occurred if a vacuum is present at the atmospheric drain tank vent while the vessel is underway?	The control valve regulating flow to the main condenser is stuck in an open position.	The control valve ball float has been holed causing the ball to remain in a lowered position.	There is a definite possibility of the tank overflowing causing loss of distilled water.	There will be an increase of vacuum in the main condenser within a short period of time.
576	Which ring dam arrangement should be used for centrifugal purification?	The largest inside diameter ring without loss of oil.	The largest outside diameter ring without loss of oil.	The smallest inside diameter ring without loss of oil.	The smallest outside diameter ring without loss of oil.
577	Which steam plant operating condition requires priority attention over the other situations listed?	High level of lube oil in the refrigeration compressor	High water level in the deaerating feed water heater	Low level effluent in chlorination section of sewage tank	High water level in the fuel oil sludge tank
578	Which steam plant watch operating condition requires priority attention over the other conditions listed?	High level main condenser	High lube oil storage tank level	Low sewage tank chlorination section level	Vapor issuing from deaerating heater vent
579	Which steam plant watch operating condition will require priority attention over the other conditions listed?	High level main condenser	High level lube oil storage tank	Low water level main boiler	Deaerating tank pressure 2 psig above normal
580	Which steam plant watch operating condition will require priority attention over the other conditions listed?	High level hydrazine dosing tank	High level lube oil storage tank	Low sewage tank chlorination section level	Low lube oil level in the operating feed pump
581	Which steam plant watch operating condition will require priority attention over the other situations listed?	Low level, lube oil gravity tank	High level, lube oil storage tank	Low level, chlorination section of the sewage tank	Low lube oil level to operating, chemical dosing pump
582	Which steam plant watch operating condition will require priority attention over the other situations listed?	Low oil level in the steering gear sumps	High lube oil level in all storage tanks	Low level effluent in chlorination section of sewage tank	Low bilge water levels throughout entire engine room
583	Which steam plant watch operating condition will require priority attention over the other situations listed?	Low level of lube oil in cleansing tank	High level of lube oil in storage tank	Low level effluent in chlorination section of sewage tank	High water level in main propulsion boiler
584	Which steam plant watch operating condition will require priority attention over the other situations listed?	Low level in lube oil sludge tank	High level in lube oil in storage tank	Low level effluent in chlorination section of sewage tank	High bilge water level throughout engine room
585	Which turbine blade is best suited for high pressure installations?	Pot-brazed oval shrouded type	Gaged type	Wire-lashed type	Shrouded segmental type

ID #	Question	Choice A	Choice B	Choice C	Choice D
586	Which type of bearing lining material is most commonly used in modern precision split type bearings?	Zinc	Monel	Babbitt	Copper
587	Which type of packing is primarily utilized to control steam leakage from the casing of a modern auxiliary turbine?	Teflon	labyrinth	carbon	dovetail
588	Which type of reduction gear arrangement is shown in the illustration?	Locked train, double reduction.	Articulated, double reduction.	Nested, double reduction.	Two-pinion, single reduction.
589	While a vessel is underway the low pressure turbine high-speed pinion is damaged. The pinion is then removed from the gear train. Under these circumstances, the main unit is capable of which speed and direction?	Reduced speed ahead only	Reduced speed astern only	Reduced speed ahead and full speed astern	Reduced speed astern and full speed ahead
590	While a vessel is underway, one of the FIRST indications of the failure of the gland leakoff exhaust fan motor is _____.	excessive steam leakage at the turbine glands	loss of vacuum at the turbine	increased turbine exhaust temperature	water knock on the turbine gland steam header
591	While a vessel is underway, one of the FIRST indications of the failure of the gland leakoff exhaust fan motor is _____.	loss of vacuum at the turbine	increased turbine exhaust temperature	water knock in the turbine gland steam header	excessive steam leakage at the turbine glands
592	While a vessel is underway, which of the conditions listed would indicate a leak in the lube oil cooler?	Excessive lube oil consumption.	Excessive water discharge rate from the lube oil purifier.	Contamination of the lube oil.	Corrosion of the journals and bearings.
593	While making a round of the engine room, the oil in all of the main engine bearing sight glasses appears to be milky. The probable cause is _____.	cold running of the bearing	collapse of the oil wedge	air leakage into the bearing	water contamination of the lube oil
594	While making engine room rounds at sea, you observe excessive steam leaking from the forward gland on the high pressure turbine. This may indicate that the _____.	turbine is operating at low speed	gland seal leakoff line is obstructed	main condenser vacuum is too high	drains were left open
595	While making your rounds, you notice the main lube oil temperature to be higher than normal. To remedy this situation, you should _____.	speed up the main lube oil pump	open the lube oil cooler seawater inlet valve wider	throttle in on the lube oil cooler seawater discharge valve	increase the opening of the lube oil cooler seawater discharge valve
596	While on watch aboard a 900 psi (6.2 MPa) steam vessel, you suddenly hear a loud, piercing, high-pitched noise. Which of the following actions should you take?	Vacate everyone from the engine room immediately, as this is the preliminary signal that CO2 is about to be released.	Rapidly move towards the direction of the noise to investigate the probable source.	Cautiously move towards the source of the noise, sweeping the beam of your flash light ahead of you.	Move away from the noise to find a broom, then cautiously advance, sweeping the handle ahead of you to locate the source.

ID #	Question	Choice A	Choice B	Choice C	Choice D
597	While on watch aboard a 900 psi steam vessel, you suddenly hear a loud, piercing, high-pitched noise. Which of the following actions should you take?	Vacate everyone from the engine room immediately, as this is the preliminary signal that the steam smothering system is about to be released.	Rapidly move towards the direction of the noise to investigate the probable source.	Cautiously move towards the source of the noise, sweeping the beam of your flash light ahead of you.	Move away from the noise to find a broom, then cautiously advance, sweeping the handle ahead of you to locate the source.
598	While on watch at sea with only one ship's service turbo-generator on line, the entire plant suddenly blacks out without warning. After restoring power, which of the following faults would most likely have attributed to this casualty?	The turbo-generator throttle valve position "micro switch" vibrated open, allowing the main breaker to trip open according to its protection circuitry.	Someone pushed the trip button to the 'shore power' breaker.	The main air compressor suddenly stopped.	The standby generator started automatically and became motorized.
599	While on watch at sea, you notice the main lube oil pump suction vacuum has been increasing. To correct this you should _____.	slightly open drain lines on each of the duplex suction strainers to decrease vacuum differential	back flush each of the duplex strainer baskets through the recirculating line	stop the main engine prior to removing suction strainer covers, if changing over to the standby strainer did not correct the condition	rotate the knife edge cleaning device handle one complete turn
600	While on watch in the engine room and steaming at a steady rate, the water level begins to decrease and suddenly drops out of sight in the boiler gage glass. Your FIRST corrective action should be to _____.	secure the fires	slow down the engines	blow down the boiler gage glass	open the feed water regulator bypass
601	While standing watch at sea and steaming full ahead, reducing the boiler forced draft pressure would also have a tendency to correct which discrepancy?	High superheat temperature.	White smoke from the stack.	High stack temperature.	All of the above.
602	While standing watch in the engine room of a steam vessel while at normal sea speed, you notice that the condensate temperature outlet of the air ejector condenser is fluctuating by approximately 12°F. You should therefore _____.	call the Chief Engineer immediately	only need to log the temperature and inform the watch engineer who will relieve you	only need to add make-up feed to the system	first determine whether the main condenser level is normal and steady
603	While standing watch in the engine room, irregular feeding or surging of the feed water supply to a flash evaporator may be attributed to _____.	erratic water flow through the air eductor	a clogged vent line from the air eductor condenser	excessive pressure in the seawater feed heater	a dirty strainer in the saltwater feed pump suction line

ID #	Question	Choice A	Choice B	Choice C	Choice D
604	While standing watch in the engine room, which of the following actions should be taken to reestablish a 'blown' air ejector loop seal?	Decrease the steam pressure to the air ejector nozzles.	Shut off the steam to the second stage air ejector momentarily then open it again.	Momentarily close the valve in the loop seal line, then reopen slowly.	Increase the condensate flow through the air ejector.
605	While standing watch in the engine room, you hear a 'crackling' sound coming from within a salt water service system centrifugal pump. The most probable cause for this occurrence would be from an abnormal condition at the _____.	shaft sleeves	discharge volutes	wearing rings	pump suction
606	While standing watch in the engine room, you notice a high reading at a salinity cell located in the loop seal between two stages of a flash type evaporator. This would indicate _____.	chill shocking is necessary to remove scale	leakage at the second-stage condenser	faulty operation of the brine overboard pump	carryover in the first-stage
607	While standing watch in the engine room, you suspect air leaking into a flash type distilling plant. The most probable cause(s) of the air leak could occur through _____.	gasketed joints	valve stems	gage glass packing	all of the above
608	While standing watch underway at sea in the engine room, there is a complete loss of electrical power. When power is restored, the steering gear pump motor will _____.	have to be restarted from the steering gear room	have to be reset before restarting	restart automatically because it utilizes an LVR controller	trip via the overload relay
609	While standing watch underway at sea, you notice salinity carryover in the low pressure distilling plant. This can be a result of _____.	insufficient chemical feed	a pressure drop through the loop seal	below normal steam supply pressure	low distillate conductivity
610	While standing watch underway in the engine room, failure of the normal power supply will cause the emergency generator to provide power through _____.	the main bus tie feeder	its output breaker and automatic bus transfer device	line connection feeder	power failure alarm bus
611	While standing watch, what immediate action should you take if you are running at sea speed and notice a sudden and significant drop in lube oil pressure to the main turbine?	Immediately increase cooling water flow to lube oil cooler.	Slow the turbine to minimum speed and watch the bearing temperatures.	Stop the main shaft using astern steam.	Shift strainers and gravity tanks.
612	While standing your engine room watch at sea, you notice the D.C. heater level dropping below the normal minimum level as indicated by the remote level indicator. Which of the following actions should be taken?	Immediately stop the main engine.	Do nothing in particular as this is a common occurrence with steam propulsion plants.	It is only necessary to immediately open the automatic make-up feed bypass valve.	Open the make-up feed valve bypass valve and check the condenser and make-up feed tank levels immediately.

ID #	Question	Choice A	Choice B	Choice C	Choice D
613	While standing your engine room watch at sea, you notice the D.C. heater level is dropping below normal as indicated by the remote level indicator. The boiler drum level is observed to be normal, as is the main condensate pump discharge pressure. Therefore, you should _____.	increase the boiler firing rates	decrease the boiler firing rates	reduce the feed water level set point	open the make-up feed bypass valve
614	While standing your engine room watch at sea, you notice the D.C. heater level is gradually dropping as indicated by the remote level indicator. Which of the following actions should you take?	Do nothing as this is a common marine plant occurrence.	Immediately open the automatic make-up feed bypass valve.	Check the condensate level in both the main and auxiliary condenser hot wells.	Immediately stop the main engine.
615	While underway at sea, a mechanical malfunction in one of the ship's service generators operating in parallel, requires that you must secure that generator. In order to prevent a possible overload to the remaining generator, which of the following sequential courses of action should be taken?	Trip the malfunctioning generator's circuit breaker and prime mover throttle trip.	Trip all non-vital distribution feeder circuit breakers, decrease the load on that generator by using the governor, trip the malfunctioning generator's circuit breaker, and trip the prime mover throttle.	Trip the malfunctioning generator's circuit breaker and distribution feeder circuit breakers.	Trip all non-vital distribution feeder circuit breakers, the malfunctioning prime mover turbine throttle trip, and the generator circuit breaker.
616	While underway at sea, one of three available centrifugal salt water service pumps is in operation with a sea water temperature of 50°F. The operating temperature of all the systems supplied by this pump appear to be high. Your next proper course of action would be to _____.	start a second pump and operate it in parallel	start a second pump and verify a higher discharge pressure after securing the first pump	start the second pump, open the casing vent valve of the first pump, then secure the first pump	start the second pump, secure the first pump and do nothing else with the salt water service system
617	While underway on watch in the engine room of a steam vessel, the proper valve positions for controlling feed water to the boiler using the auxiliary feed system should be _____.	the auxiliary check valve fully open and the stop valve used to regulate the amount of flow	the stop valve fully open and the auxiliary check valve used to regulate the amount of flow	the stop and check valves fully open and the feed pump speed used to regulate the amount of flow	the check valve fully open and the stop valve regulated by the feed water regulator
618	While underway on watch, you notice that you need to constantly increase the coil pressure in the high pressure contaminated evaporator to maintain capacity. Which of the following may be the cause?	The brine density is improper.	The heating transfer surfaces are being layered with scale.	Impure distillate is being produced.	Shell vapor pressure is constantly decreasing.

ID #	Question	Choice A	Choice B	Choice C	Choice D
619	While underway on watch, you notice that you need to constantly increase the coil pressure in the high pressure contaminated evaporator to maintain capacity. Which of the following may be the cause?	The water level is too high.	Excessive distillate is being produced.	The heating coils have excessive scale buildup.	Shell pressure is excessive.
620	While underway, the boiler water level in a steaming boiler begins dropping rapidly and cannot be kept at the normal level by standard practices. As the engineer on watch, your next action should be to _____.	continue to speed up the feed pump to raise the water level	blow down the gage glass to find the true water level	secure the steam stop and then secure the fires	secure the fires and then secure the main feed stop/check valve to the boiler
621	Why are convergent-divergent nozzles used in high-pressure turbine applications?	They are easy to manufacture.	They are less susceptible to steam erosion than other nozzle types due to their shape.	They produce a larger pressure drop and therefore are more efficient than other nozzle types.	They direct the steam flow more efficiently than other nozzle types.
622	Why are geared turbine installations equipped with turning mechanisms?	For jacking the main engine over periodically when secured.	For turning the main engine during routine inspections.	For turning the main engine during warm-up and securing operations.	For all of the above purposes.
623	Why are the gear teeth of large reduction gears usually cut in a temperature controlled room?	To prevent stress buildup.	To prevent ambient conditions from affecting the tolerances of the machining process.	To control the size of the journals.	To control cutting machine vibration.
624	Why do double flow reaction turbines produce very little axial thrust?	Because there is no pressure drop across the blades.	Because partially expanded steam is exhausted to the low pressure turbine where the expansion is completed.	Because the axial thrust is developed on the rotor in opposite directions providing counterbalance.	Because equalizing holes are provided in the turbine wheels.
625	Why is a flexible I-beam rigidly mounted at the forward end of the main turbine?	To relieve stress on the hull.	Allow for turbine casing expansion and contraction.	To relieve stress at the light end of the turbine.	Prevent the reaction developed within the turbine from being transmitted to the hull.
626	Why is a high lube oil level in the main engine reduction gear sump undesirable?	Oil churning may result.	The oil may become aerated.	Oil temperature may rise.	All of the above.
627	Why is it important to maintain good vacuum in a main turbine unit while operating astern?	Reduces windage loss in the astern section.	Prevents the ahead element from operating backwards.	Maintains proper temperatures in the ahead stage.	Limits the amount of time necessary to operate astern.

ID #	Question	Choice A	Choice B	Choice C	Choice D
628	Why is it occasionally necessary to verify the accuracy of the distilled water make-up feed tank level remote indicator?	It is possible to loose vacuum if the level rises above the make-up feed piping connection.	A false high reading may contribute to an increase in condenser absolute pressure.	The tank may overflow in the engine space causing unnecessary damage to all electrical equipment.	All of the above are correct.
629	Why is it occasionally necessary to verify the accuracy of the distilled water make-up feed tank remote level indicator?	It is possible to loose vacuum if the level rises above the make-up feed piping connection.	A false high reading may contribute to an increase in condenser absolute pressure.	The tank will overflow to the potable water tanks causing contamination	All of the above are correct.
630	With vacuum up and the main propulsion turbine standing by while awaiting engine orders, it is necessary to roll the unit alternately ahead and astern every five minutes to _____.	distribute the gland sealing steam evenly throughout the glands	slowly bring the lube oil and bearings to operating temperature	warm the astern guarding valve and the low lube oil pressure throttle trip	reduce the possibility of warping the turbine rotors
631	You are standing a sea watch in the engine room of a steam vessel. To operate at maximum efficiency, adjustments to the boiler combustion control system should be made by setting the _____.	fuel oil back pressure	air volume regulators	fuel/air ratio controller	forced draft fan damper positions
632	You are standing watch in the engine room of a steam vessel. You should blow down a gage glass periodically to _____.	remove any sediment that has accumulated	maintain the proper water level in the steam drum	provide water samples for the second assistant	test the feed water stop-check valve
633	You would not see a flow through the bull's-eye of the lube oil gravity tank overflow line when the _____.	main engines are stationary at a stop bell	main engines are secured and the turning gear is engaged	the lube oil gravity tanks are being drained	main engines are turning at normal sea speed
634	You would not see a flow through the bull's-eye of the lube oil gravity tank overflow line when the _____.	main engines are stationary at a stop bell	main engines are secured and the turning gear is engaged	the lube oil service pumps are secured	main engines are turning at normal sea speed
635	Your main propulsion boilers are equipped with a two element feed water regulating control system. While on watch, you are required to respond to a 'slow' bell from full sea speed. Under these conditions the automatic feed water regulator will have _____.	opened the feed water valve wide due to the effect of shrink	closed down on the feed water valve due to the decrease in steam flow demand	partially closed down on the feed water valve due to the effect of swell	fully opened the feed water valve due to the increase in steam flow

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