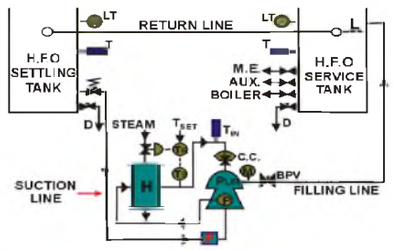
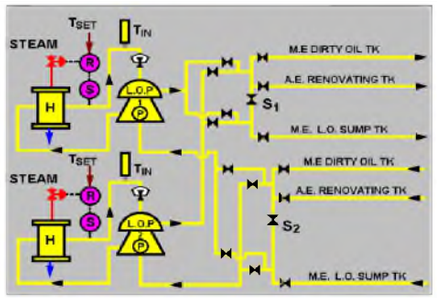
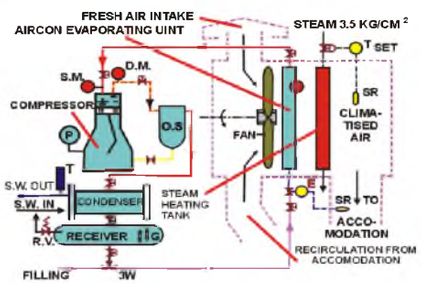
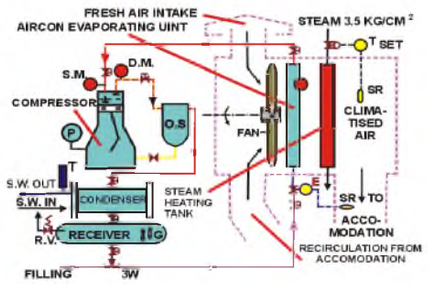
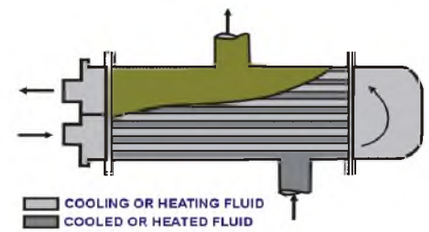
GUÍA DE ESTUDIO - JEFE DE MAQUINAS						
Q. Number	**Question**	***IMAGEN***	**A**	**B**	**C**	**D**
PLAN AND SCHEDULE OPERATIONS						
1	On board your vessel the main engine consumes hourly 1375 litres HFO, the boiler 560 litres per hour and the auxiliary diesel 166 litres per hour. At what throughput shall you feed the HFO purifier?		3700 litres/hour	3200 litres/hour	2600 litres/hour	2350 litres/hour
2	Suppose the crankcase oil system contains 14000 litres of oil and the capacity of the Lubrication Oil purifier is 2500 litres/hour maximum, what throughput should be maintained?		2300 - 2400 litres per hour.	1950 - 2100 litres per hour.	1680 - 1850 litres per hour.	1350 - 1450 litres per hour.
3	What is the most practical way to control the humidity of the cooled air to the accommodation as well as efficiency control in tropical climates ?		Keep the outside watertight doors closed as much as possible.	Keep portholes and vents closed.	Keep both fresh air intake and recirculation open , throttle with F.A.I.	Ensure galley, laundry room, drying room doors always closed.

GUÍA DE ESTUDIO - JEFE DE MAQUINAS						
Q. Number	**Question**	***IMAGEN***	**A**	**B**	**C**	**D**
PLAN AND SCHEDULE OPERATIONS						
4	You are required to order 1 years supply of refrigerant compressor oil and you estimate that consumption will be 480 litres in that time. If there is already an open drum of 180 litres on board, what will you order ?		One drum x 205 litres + 5 pails x 20 litres.	Two drums x 205 litres.	15 pails x 20 litres.	24 pails x 20 litres.
5	What kind of 5-yearly maintenance should be carried out on this type of heat exchanger ?		Pull and clean tube nest and inspection by class surveyor.	Exchange all gaskets, clean and test for classification.	Mechanical and chemical cleaning, test for classification.	Open inspection covers and check for leaks, clean tubes.
6	According to regulations, on board ships it is necessary to have PUMP REDUNDANCY. What does this mean ?		All pumps in the engine room are duplicated	All essential pumps in the engine room have a back-up possibility	Two identical pumps must be fitted for each circuit.	A stand-by pump must be available for each pump separately
7	What is the most important connection with the deck department for the chief engineer ?		Maintenance of all safety appliances.	Maintenance of all cargo gear.	Knowledge of all sailing plans and cargo loading/discharging.	The ships speed and consumption.
8	What is the most aspect of communication with the deck department ?		Ballasting operations, cargo hold bilge pumping.	Executing of orders from the bridge.	Executing orders from and issuing warnings to the bridge.	Operation of fire fighting and life saving equipment.
9	Which of the following is the Chief Engineer's obligation to calculate in advance for the next voyage and may not be delegated?		Fuel requirement.	Lub oil requirement.	Spares and consumable stores essential for the voyage.	All of these options.

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Q. Number	**Question**	***IMAGEN***	**A**	**B**	**C**	**D**
	PLAN AND SCHEDULE OPERATIONS					
10	The water in a steaming auxiliary boiler should be tested daily for		dissolved oxygen.	dissolved nitrogen.	chlorides.	sulphites.
11	In very rough seas you suspect a cracked main engine cylinder liner. What would you do?		Stop the engine immediately and renew the liner.	Proceed as normal, monitoring conditions until the weather improves.	Stop the engine and renew the liner when the weather improves.	Proceed at reduced revs until the weather improves and then renew the liner.
12	Due to a major leak, all of the main engine lube oil is in the engine room bilges. After repairing the leak how would you proceed?		Re-use the oil after purifying.	Pump the oil to the renovating tank, purify and re-use.	Re-use half of the oil and top up with new oil.	Pump oil to the renovating tank and renew entire engine oil charge.
13	If the main engine lube oil filters require constant cleaning which of the following is the most likely?		Fuel contamination of the lube oil.	Centrifugal purifier not effectively cleaning the lube oil.	Damaged or worn cylinder liners.	Damage to the engine bearings.
14	What would be the first indication of an incipient problem with the provision room's refrigerating plant?		Softening of the deep freeze contents.	Rise in temperatures of the provision rooms.	Increased refrigerant compressor running hours.	Increase in evaporator return temperatures.
15	If you suspect the presence of water contamination of the boiler fuel, what should you do?		Test for water at the settling tank drain.	Check the colour of the funnel emission.	Shut down the boiler and drain the lines.	Open the drain on the fuel oil suction filters.
16	If the alkalinity of the main engine jacket water was dropping, what would you check first?		Amount of water added to the header tank.	Levels of additive being added.	Sea water leakage at the heat exchanger.	Contamination of the topping up water.
17	If a lube oil analysis report was received indicating increased alkalinity of the oil, what would you suspect?		Fuel contamination.	Incorrect oil has been used for topping up.	Jacket water contamination.	Sea water contamination.
18	If you suspected bacterial contamination of the fuel oil, which of the following is the most reliable indicator of bacterial growth?		Presence of water in the fuel.	Unpleasant smell when cleaning filters.	Inefficient combustion.	Although fuel pressure is low, the filters appear clean.
19	What action would you take if the watchkeeper reported that the air conditioning system filter/drier unit was icing up?		Check that the sea water cooling was satisfactory.	Check that there was sufficient refrigerant in the system.	Isolate the filter/drier unit, open up and fit a new element.	Check that all outside doors and ports were secured.

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Q. Number	**Question**	***IMAGEN***	**A**	**B**	**C**	**D**
	PLAN AND SCHEDULE OPERATIONS					
20	To obtain the maximum efficiency when operating a centrifugal separator, heavy fuel oil should be...		purified at bunker tank temperature.	heated to 80 - 90°C (175-195°F)	purified with the constant addition of water.	heated to a minimum of 120°C (248°F)
21	If a lube oil analysis report was received indicating water contamination of the oil, what action would you take?		Increase the purifier hours and submit another sample.	Investigate possible source, purify and submit further sample.	Take no action until receiving the results of a second sample.	Renew the entire oil charge, repair the leak and submit a further sample.
22	What is the difference when using a centrifugal separator as a clarifier rather than a purifier?		The clarifier does not require a water seal.	There will be less discs and wider separation spaces when clarifying.	When clarifying a different set of discs must be used.	Clarifiers will use a different size of dam ring.
23	Whilst on passage a crack developes in the main engine crankcase. What action would you take?		Proceed as normal but monitore the crack for further deterioration.	Drill and stop the crack ends, proceed at reduced revs.	Inform the Captain and head for closest port.	Stop the engine and await advice before proceeding.
24	What is the most serious consequence of piston damage in a trunk piston type diesel engine?		Contamination of the lube oil.	Crankcase explosion.	Damage to cylinder liner.	Loss of engine power output.
25	In a chilled water air conditioning system, what is the possible danger if the accommodation vent fans stop?		That the chiller will freeze up.	That the compressor will overload.	That the expansion valve will freeze up.	That the compressor bursting disc will rupture.
26	Why might the Chief Engineer decide to slow the main engine in rough sea conditions?		To conserve fuel.	To prevent the engine overspeeding.	Because of increased cylinder wear.	To prevent damage to the thrust bearing.
27	If the main jacket cooling system required constant topping up, what is the most likely source of leakage?		The bottom cylinder liner seals.	The circulating pump shaft seal.	The cylinder cover/liner joint.	The engine inlet and outlet connections.
28	Which of the following does not require to be entered in the Oil Record Book?		All lube oils loaded or discharged.	All bilge discharges at sea and alongside.	All fuel oils bunkered.	Fuel transfers from bunker to service tanks.
29	You notice that the lube oil consumption of a diesel engine has decreased markedly. What action would you take?		Take no action but continue to monitor lube consumption.	Reduce the load and increase the purifier running times.	Stop the engine and check for fuel or water leaks.	Check the jacket water topping up frequency and test a lube oil sample.
30	If a lube oil analysis report was received indicating a decrease in the TBN, what would you suspect?		Fuel contamination.	Sea water contamination.	Incorrect oil has been used for topping up.	Contamination with combustion products.
31	The header tank boils up quickly in the main engine jacket water cooling system. What is the most likely reason?		The engine is overloaded.	There is a cracked cylinder liner, or cover.	The expansion tank level is too low.	The jacket water circulating pump is malfunctioning.

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Q. Number	**Question**	***IMAGEN***	**A**	**B**	**C**	**D**
	PLAN AND SCHEDULE OPERATIONS					
32	If a lube oil analysis report was received indicating seriously lowered flashpoint of the oil, what action would you take?		Increase the purifier hours and submit another sample.	Pump oil to the renovating tank, apply heating and purify.	Renew the entire oil charge, repair the leak and submit a further sample.	Take no action until receiving the results of a second sample.
33	What is a possible result of the oil fuel heater operating at a too high temperature?		Carbon deposit build up on the heater coils.	The heater relief valve will open.	The fuel oil pump will lose suction.	The recirculating valve will automatically close.
34	What precaution must be observed when fitting new anodes to heat exchanger sea water spaces?		PTFE tape applied to the plug threads to enable easy removal.	Ensure the anode is as close as possible to the tube plate.	Ensure no damage is caused to the exterior surface of the anode.	Ensure good, clean contact is made between anode and cooler body.
35	If the oily/water separator discharge is above the maximum allowable level what would you expect to happen to prevent oil discharge?		The bilge discharge pump is stopped and an alarm sounds.	A visible alarm in the control room and on the bridge alerts the watchkeeper.	An audible alarm sounds in the control room to alert the watchkeeper.	An alarm sounds and the discharge is dumped to the bilge.
36	After water washing the turbocharger exhaust side, the blower starts to vibrate. What is the most likely cause of this?		The securing bolts for the blower unit have loosened.	The rotor blades are damaged or the blades are only partially cleaned.	The air inlet filter is choked.	The water drain for the washing system is blocked.
37	When the watchkeeper checks the control room of a UMS engine room the turbo blower rpm have increased overnight. What could have caused this?		The fuel viscosity too high.	Favourable wind and current.	Adverse wind and current.	Poor combustion due to malfunction of fuel valves.
38	Why is it important to slow down the main engine RPM while water washing the turbocharger?		To protect the blower vanes and bearings.	To prevent the rotor from becoming unbalanced.	To protect rotor blades from damage.	To protect the exhaust gas economizer.
39	Which of the following salts, found in boiler feed water, can be responsible for the most damaging effects?		Sodium Chloride.	Magnesium Chloride.	Calcium Sulphate.	Magnesium Sulphate.
40	The plate heat exchanger is separated for cleaning. How should this be carried out if the plates are badly coated?		Fit a spare set of plates and have the dirty plates cleaned by a specialist contractor.	Put the plates in water with cleaning chemicals. Use a soft brush or high pressure cleaner with care.	Use a scraper and high pressure cleaner.	Use a wire-brush or metal scraper to clean the plates.

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Q. Number	**Question**	***IMAGEN***	**A**	**B**	**C**	**D**
		PLAN AND SCHEDULE OPERATIONS				
41	If the watchkeeping engineer reported the main fuel filters required constant cleaning in poor weather, what would you suspect?		Sludge being picked up in the fuel tanks.	Ingress of sea water into the fuel.	Air in the fuel system.	Poor quality fuel supply.
42	If on inspection of a tubular heat exchanger, the sacrificial anodes are unworn, what could this signify?		Incorrect anodes fitted.	The anodes are suitable for further use.	No electrical contact between anode and cooler body.	Coolant flow too high to establish the electrolytic circuit.
43	If a crankcase explosion occurs, it is essential...		to keep the engine running at reduced load until it has cooled down.	to stop the engine and keep the crankcase doors shut until the engine has cooled.	to stop the engine and shut off the lubricating oil supply immediately.	to stop the engine and ventilate the crankcase as soon as possible.
44	When the main engine is stopped with the fuel lever at no fuel position but the engine continues to run, what would you check first?		The governor settings.	The fuel lever control linkage.	The fuel pump racks.	The air start valves.
45	Before making an annual load line inspection, the surveyor must see...		all safety certificates.	only the current load line certificate.	only the current certificate of class.	only the previous annual certificate of survey.
46	If the alkalinity of the main engine jacket water was dropping but the addition of topping up water was normal, what would you suspect?		Contamination of the jacket water with combustion gases.	Internal water leakage.	Sea water contamination.	Poor quality of the domestic supply used for the topping up water.
47	If a diesel engine fuel boost pump has to be by-passed and the engine supplied by gravity feed, what possible consequence would you expect?		The engine will run unevenly.	The exhaust temperature scatter will increase.	The injection pumps will overheat.	The engine will not operate at full load.
48	If you bunker fuel with a high sulphur and ash content, what action would you take?		Lower the purifier throughput.	Increase the purification temperature.	Operate the main engine at reduced load.	Set the high exhaust temperature alarms slightly higher.
49	On completion of the fitting of a new main sea circulating pump, an inspection must be carried out by...		A surveyor from the registration authority.	A surveyor from the classification society.	An appointed marine surveyor.	A senior ship's engineeer.
50	The presence of oil in the condensate return drains inspection tank is most likely to be the result of...		a defective relief valve on the fuel oil heater.	improper drainage of the fuel oil heater coils.	a leaking heating coil in a fuel oil tank.	operating the fuel oil heater at excessive temperatures.

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Q. Number	**Question**	***IMAGEN***	**A**	**B**	**C**	**D**
		PLAN AND SCHEDULE OPERATIONS				
51	On joining a vessel, what pollution certificate would you check was valid?		Classification survey certificate for oily/water separator.	Registration authority pollution certificate.	IOPP certificate.	Oily water separator, registeration authority approval certificate.
52	What would you ensure that the watchkeeping engineer was noting in the Oil Record Book?		Quantities of bunkers and bilge discharges.	Start and stop times of bunkers and bilge discharges.	Ship's position during bunkers and bilge discharges.	All of these must be entered in the oil record book.
53	What is the most serious consequence of scale formation on the water side of boiler tubes?		Overheating of tubes due to reduced heat transfer.	Loss of efficiency due to reduced heat transfer.	Increased fuel consumption due to reduced heat transfer.	Increased feed consumption due to reduced heat transfer.
54	You have checked the oil viscosity in an alternator diesel engine with the lube oil test kit. The result shows that the viscosity is very low, what action would you take?		Stop the engine immediately, check for fuel leaks and renew the oil charge.	Maintain the engine in service but monitor the lube oil viscosity.	Stop the engine and part renew the oil charge, put back into service and retest regularly.	Stop the engine and batch purify the lube oil.
55	You are experiencing blow-by on the main engine but, due to operational circumstances, it is impossible to stop and carry out a piston overhaul. What is the correct action to take?		Continue running at normal load and speed, alert the watchkeepers to monitor conditions.	Reduce speed and closely monitor exhaust temperature on the affected unit.	Increase cylinder oil consumption.	Reduce speed temporarily and increase cylinder oil supply.
56	In particularly rough sea conditions which of the following problems must most concern the Chief Engineer?		Bilge high level alarms sounding.	Fuel being contaminated with sludge.	Fuel tank low level alarms sounding.	Fluctuating auxiliary boiler water level.
57	If you need to carry out essential main engine maintenance that will take longer than the next planned port stay, how would you deal with the situation?		Inform the Captain and Engineering Superintendent that extra port time will be required.	Carry out the minimum work and put off the maintenance until a suitable length port stay.	Consult with the Captain and Engineering Superintendent to minimise any delay.	Start the maintenance work and delay the sailing until completed.
58	During operation of the main engine, the exhaust temperature increases on one of the cylinders. The turbocharger starts surging and smoke is coming from the inlet air filter. What is the probable cause?		Scavenge box fire.	High back pressure in the exhaust system.	Turbocharger failure.	Fuel valve seized in the open position.

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Q. Number	**Question**	***IMAGEN***	**A**	**B**	**C**	**D**
	PLAN AND SCHEDULE OPERATIONS					
59	The low pressure alarm for a diesel engine jacket cooling water system should be set...		slightly lower than static system pressure, with the pump running.	slightly lower than the static system pressure, with the pump stopped.	slightly higher than the static system pressure, with the pump stopped.	exactly equal to the static system pressure, with the pump stopped.
60	Where would you expect to find information about pilot transfer arrangements for your ship?		The ISM Code	The ship's manuals	SOLAS	The Master's standing orders
61	If the ship's dummy run inspection has uncovered a problem, when should this preferably be communicated to the inspector?		by email before he/she comes aboard	during the pre-inspection meeting	as he/she comes to it during the course of the inspection	at the post-inspection meeting
62	If, following an accident, you need to request medical help, who, apart from your head office, needs to be notified?		The IMO	The Flag State	The ILO	The P & I Club
63	What should happen when the inspector first arrives on board?		He/she is escorted directly to the Master's office.	He/she is welcomed, asked for ID, searched and given a shipboard ID.	He/she is escorted to the Chief Officer	He/she is escorted to the pump room
64	Shipboard management should encourage crew members to participate in safety. Which of the policies suggested is not appropriate?		Crew members and officers should regularly question their own and others' safety.	Incidents which affect or could affect safety should be reported and investigated.	A "blame culture" should be introduced to identify wrong-doers and define appropriate punishment.	Incentives should be provided to encourage the reporting of potential hazards and ideas for improvement.
65	Which statement does not belong in the list? When an accident occurs, priority is given to:		the safety of the individuals involved and those who may be assisting them.	finding out who caused the incident or accident.	if necessary, stopping the work and making the scene of the accident safe for others to enter.	arranging help and any necessary first aid/medical attention.
66	Which questionnaire contains the permanent information about a bulk oil carrier's size and equipment and needs to be compiled in readiness for an inspection?		the VIQ	the VPQ	the BIQ	the BPQ
67	Which of the international regulations and industry standards listed is not part of the basis for SIRE inspections?		SOLAS	STCW	MARPOL	SIGTTO
68	What is the most common deficiency relating to passage planning?		It only covers pilot to pilot navigation.	It only covers berth to berth navigation.	It only covers seabuoy to seabuoy navigation.	It only covers pilot to seabuoy navigation

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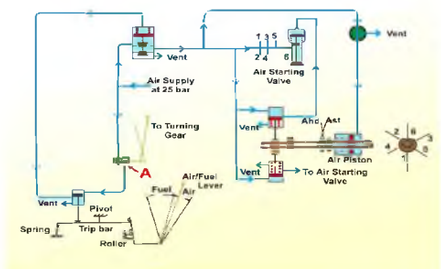
Q. Number	**Question**	***IMAGEN***	**A**	**B**	**C**	**D**
		PLAN AND SCHEDULE OPERATIONS				
69	What is the most important factor in maintaining a safe shipping operation?		Clear safety manuals	Severe punishment for those who break the rules	Regular audits	Management commitment
70	When investigating an accident which of the items of information listed would not be required?		The time of day	The weather conditions	The nature of the cargo	The state of any equipment involved
71	For how long are inspection records kept on the SIRE database?		12 months	2 years	5 years	7 years
72	At what intervals can an oil tanker expect a SIRE inspection?		Every 4-6 months	Every 10-12 months	Every 18 months	Every 18-24 month
73	For up to how long can the tanker operator make comments on the report?		up to 12 months	up to 2 years	up to 3 years	up to 5 years
74	The 'traffic light' approach is a system for dealing with material changes in circumstances. How many changes are required for the light to change from green to amber?		1	2	3	4
75	What do you think is the main reason for analysing and reporting accidents and hazardous occurrences?		To keep the Flag State informed.	To keep the shore staff informed.	It presents an opportunity to strengthen an existing safety management system.	To make an entry in the monthly safety meeting report.
76	Which International Convention mentions that a company must establish a Safety Management System?		MARPOL (International Convention for the Prevention of Pollution from Ships)	SOLAS (International Convention for the Safety of Life at Sea)	The Load Line Regulations	The establishment of a Safety Management System is not required by any Convention, but is encouraged on a voluntary basis by the IMO
77	Which of the qualifications listed is not a requirement for inspectors?		A Class 1 Deck or Engine certificate of competency	Not less than 5 years' sea service at senior officer rank on board tankers	Been audited regularly	Fluency in at least three languages
78	When writing an accident report the investigator needs, amongst other things, to:		stick to the facts and not allow opinion or supposition to colour an investigation.	suggest who should bear most blame for the accident.	include feedback received from witnesses which is clearly based on rumour.	leave out information which could damage the reputation of the company in court.

GUÍA DE ESTUDIO - JEFE DE MAQUINAS						
Q. Number	**Question**	***IMAGEN***	**A**	**B**	**C**	**D**
PLAN AND SCHEDULE OPERATIONS						
79	Which item is of critical interest to charterers as regards pollution?		oil spill clean-up equipment	the overfill alarms	the oily water separator	ocular signs that oil was spilled overboard
80	What is the most common deficiency relating to the foam system?		The system is found empty.	No procedures or instructions have been posted.	The supply pump is non-operational.	It was not included in the planned maintenance system
81	There are three barriers which can often make developing an effective engine room team harder. These are:		Age, rank and culture.	Age, rank and certification.	Culture, rank and certification.	Culture, certification and age.
82	In the starting air layout shown what is the purpose of item 'A'?		Pilot air control valve.	Automatic air venting valve.	Interlock air blocking valve.	Air relief valve.

GUÍA DE ESTUDIO JEFE DE MAQUINAS	
PLAN AND SCHEDULE OPERATIONS	
ANSWERS	
1	D
2	A
3	C
4	D
5	C
6	B
7	C
8	C
9	D
10	C
11	D
12	D
13	B
14	C
15	A
16	A
17	C
18	B
19	C
20	B
21	B
22	A
23	B
24	B
25	A
26	B
27	B
28	D
29	D
30	C
31	B

GUÍA DE ESTUDIO JEFE DE MAQUINAS	
PLAN AND SCHEDULE OPERATIONS	
ANSWERS	
32	C
33	A
34	D
35	A
36	B
37	C
38	C
39	C
40	B
41	A
42	C
43	B
44	C
45	A
46	A
47	D
48	C
49	B
50	C
51	C
52	D
53	A
54	A
55	D
56	B
57	C
58	A
59	C
60	B
61	B
62	D

GUÍA DE ESTUDIO JEFE DE MAQUINAS	
PLAN AND SCHEDULE OPERATIONS	
ANSWERS	
63	**B**
64	**C**
65	**B**
66	**B**
67	**D**
68	**A**
69	**D**
70	**C**
71	**B**
72	**A**
73	**A**
74	**A**
75	**C**
76	**B**
77	**D**
78	**A**
79	**C**
80	**B**
81	**C**
82	**C**

GUÍA DE ESTUDIO JEFE DE MAQUINAS
PLAN AND SCHEDULE OPERATIONS
ANSWERS