Model Question Paper -2 with effect from 2020-21(CBCS Scheme)

USN | | | | | | | | | | |

Fifth Semester B.E. Degree Examination

Marine Auxiliary Machines-1

TIME: 03 Hours **Max. Marks: 100**

Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.
02.
03.

		Module – 1	**Marks**
Q.1	**(a)**	What is a Lube Oil system, explain the need for it?	5
	(b)	Sketch and explain the Main Engine FO system	12
	(c)	Analyze the need for draining the Air bottles. Explain what would happen if the watch keeper has not done this routine for a month	3
		OR	
Q.2	**(a)**	What is a air compressor?	2
	(b)	Sketch and explain the 3 engine room platforms .	15
	(c)	Compare and state the differences between bilge and slude system .	3
		Module – 2	
Q.3	**(a)**	What is a needle valve?	2
	(b)	Draw the butterfly valve and mark the parts. Where would you keep butterfly valves in a piping system and what are its advantages?	12
	(c)	What is the difference between filter and a strainer? where would you place the latter and former .	6
		OR	
Q.4	**(a)**	What is a centrifugal filter?	2
	(b)	Draw the auto back flush filter and mark the parts. Where would you keep hot filters in a system and why?	15
	(c)	Why do we need a steam condensation line?	3
		Module – 3	
Q.5	**(a)**	Define and explain cavitation.	5

	(b)	Sketch and explain the parts of a gear pump.	15
		OR	
Q.6	(a)	What is volute casing and how does it help in the working of a centrifugal pump?	4
	(b)	Sketch and mark the parts of a screw pump.	10
	(c)	Compare the Fire pump and bilge pumps and list their advantages and disadvantages	6
		Module – 4	
Q.7	(a)	Define and explain the principles of heat transfer needed for heat exchangers.	6
	(b)	Draw and explain the construction of a Plate type heat exchanger.	8
	(c)	Compare the plate type and tube type FWG and list their advantages and disadvantages.	6
		OR	
Q.8	(a)	Define evaporation and condensation .	4
	(b)	Sketch and explain the working of a RO plant.	13
	(c)	The fresh water generator vacuum is low. What may be the reasons and what would be your course of action.	5
		Module – 5	
Q.9	(a)	What is the hunting gear ?	2
	(b)	Sketch and Explain the principle of a rotary vane steering gear system.	13
	(c)	The steering tank low level alarm has been activated. What would be your course of action as a duty engineer.	5
		OR	
Q.10	(a)	What is a heleshaw pump?	2
	(b)	Sketch and Explain the principle of a emergency steering gear system.	12
	(c)	What are the steps you would take in case of steering gear failure.	6

Table showing the Bloom's Taxonomy Level, Course Outcome and Programme Outcome				
Question		Bloom's Taxonomy Level attached	Course Outcome	Programme Outcome
Q.1	(a)	L1,L2	CO1	PO1
	(b)	L2, L3	CO1,CO2	PO2
	(c)	L4	CO3	PO3,PO4
Q.2	(a)	L1	CO1	PO1
	(b)	L2,L3	CO1,CO2	PO2
	(c)	L4	CO3	PO3,PO4
Q.3	(a)	L1	CO1	PO1
	(b)	L2,L3	CO1,CO2	PO2
	(c)	L4	CO3	PO3,PO4
Q.4	(a)	L1	CO1	PO1
	(b)	L2,L3	CO1,CO2	PO2
	(c)	L4	CO3	PO3,PO4
Q.5	(a)	L1	CO1	PO1
	(b)	L2,L3	CO1,CO2	PO2,PO3
Q.6	(a)	L1,L2	CO1	PO1
	(b)	L3	CO2	PO2
	(c)	L4	CO3	PO3,PO4
Q.7	(a)	L1,L2	CO1	PO1
	(b)	L3	CO2	PO2
	(c)	L4	CO3	PO3,PO4
Q.8	(a)	L1	CO1	PO1
	(b)	L2,L3	CO1,CO2	PO2
	(c)	L4,L5	CO3,CO4	PO3,PO4
Q.9	(a)	L1	CO1	PO1
	(b)	L2,L3	CO1,CO2	PO2
	(c)	L4,L5	CO3,CO4	PO3,PO4

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Q.10	(a)	L1	CO1	PO1
	(b)	L2,L3	CO1,CO2	PO2
	(c)	L4,L5	CO3,CO4	PO3,PO4

Bloom's Taxonomy Levels	Lower order thinking skills		
	Remembering(knowledge): $\square_1$	Understanding Comprehension): $\square_2$	Applying (Application): $\square_3$
	Higher order thinking skills		
	Analyzing (Analysis): $\square_4$	Valuating (Evaluation): $\square_5$	Creating (Synthesis): $\square_6$

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Fifth Semester B.E. Degree Examination

Marine Auxiliary Machines-1

TIME: 03 Hours **Max. Marks: 100**

Note: 04. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.
05.
06.

		Module – 1	Marks
Q.1	(a)	What is a bunker system, explain the need for it?	5
	(b)	Sketch and explain the Fuel oil transfer system	12
	(c)	Analyze the need for draining the fuel oil settling tanks. Explain what would happen if draining is not done properly.	3
		OR	
Q.2	(a)	What is a hydrophore ?	2
	(b)	Sketch and explain the 3 engine room platforms	15
	(c)	Compare and state the differences between sea water cooling system and a LT/HT system	3
		Module – 2	
Q.3	(a)	What is a safety valve?	2
	(b)	Draw the SDNR valve and mark the parts. Where would you keep SDNR valves in a piping system and why?	15
	(c)	What is the difference between SDNR and a normal globe valve	3
		OR	

Q.4	(a)	What is a relief valve?	2
	(b)	Draw the Gate valve and mark the parts. Where would you keep Gate valves in a piping system and why?	15
	(c)	Why do we need a steam trap in the condensation line?	3
Module – 3			
Q.5	(a)	Define and explain NPSH.	5

	(b)	Sketch and mark the parts of a centrifugal pump.	15
		OR	
Q.6	(a)	What is centrifugal force and how does it help in the working of a centrifugal pump	4
	(b)	Sketch and mark the parts of a gear pump.	10
	(c)	Compare the reciprocating pump and centrifugal pumps and list their advantages and disadvantages	6
		Module – 4	
Q.7	(a)	Define and explain the principles of convection, conduction and radiation	6
	(b)	Draw and explain the construction of a tube type heat exchanger	8
	(c)	Compare the plate type and tube type heat exchangers and list their advantages and disadvantages	6
		OR	
Q.8	(a)	Define reverse osmosis	2
	(b)	Sketch and explain the working of a Fresh water generator.	13
	(c)	The fresh water generator shell temperature is very high. What may be the reasons and what would be your course of action.	5
		Module – 5	
Q.9	(a)	What is the steering gear ?	2
	(b)	Sketch and Explain the principle of a electro hydraulic steering gear system.	13
	(c)	The remote steering gear on bridge has stopped working. What would be your course of action as a duty engineer.	5
		OR	
Q.10	(a)	What is a heleshaw pump?	2
	(b)	Sketch and Explain the principle of a 4 Ram steering gear system.	12
	(c)	What are the steps you would take in case of steering gear failure?	6

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Q.1	(a)	L1,L2	CO1	PO1
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	(c)	L4	CO3	PO3,PO4
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	(b)	L2,L3	CO1,CO2	PO2
	(c)	L4	CO3	PO3,PO4
Q.3	(a)	L1	CO1	PO1
	(b)	L2,L3	CO1,CO2	PO2
	(c)	L4	CO3	PO3,PO4
Q.4	(a)	L1	CO1	PO1
	(b)	L2,L3	CO1,CO2	PO2
	(c)	L4	CO3	PO3,PO4
Q.5	(a)	L1	CO1	PO1
	(b)	L2,L3	CO1,CO2	PO2,PO3
Q.6	(a)	L1,L2	CO1	PO1
	(b)	L3	CO2	PO2
	(c)	L4	CO3	PO3,PO4
Q.7	(a)	L1,L2	CO1	PO1
	(b)	L3	CO2	PO2
	(c)	L4	CO3	PO3,PO4
Q.8	(a)	L1	CO1	PO1
	(b)	L2,L3	CO1,CO2	PO2
	(c)	L4,L5	CO3,CO4	PO3,PO4
Q.9	(a)	L1	CO1	PO1
	(b)	L2,L3	CO1,CO2	PO2
	(c)	L4,L5	CO3,CO4	PO3,PO4

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