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***B.Tech. Degree V Semester Special Supplementary Examination in
Marine Engineering June 2023***

**19-208-0504 MARINE AUXILIARY MACHINERY - II
(2019 Scheme)**

Time: 3 Hours

Maximum Marks: 60

Course Outcome

On successful completion of the course, the students will be able to:

- CO1: Understand working of steering gears and shafting of ships.
 CO2: Gain knowledge dry docking and different works associated with that.
 CO3: Understand the working of different on-board machinery, the source of noise and noise suppression.
 CO4: Understand IMO regulations on the prevention of pollution by oil, oily water and sewage.
 CO5: Explain the basic of lubrication and the testing of lubricating oil and fuel oil.
 Bloom's Taxonomy Levels (BL): L1 – Remember, L2 – Understand, L3 – Apply, L4 – Analyze, L5 – Evaluate, L6 – Create
 PI – Programme Indicators

(Answer **ALL** questions)

(5 × 15 = 75)

		Marks	BL	CO	PI
I.	(a) With a simple sketch explain the working of an electrical telemotor system used in steering gear.	10	L2	1	1.4.1
	(b) Explain safematic criteria of a steering gear.	5	L2	1	1.4.1
OR					
II.	(a) With a simple sketch explain a sea water lubricated stern tube bearing system.	9	L2	1	1.4.1
	(b) Compare the advantages of oil lubricated stern tube bearing system with sea water lubricated one.	6	L1	1	1.4.1
III.	(a) Explain various types of dry docks with respect to application, advantages and disadvantages of each type.	10	L1	2	1.4.1
	(b) Enumerate various checks carried out on propeller and rudder, during dry docking.	5	L3	2	1.4.1
OR					
IV.	(a) Describe the procedure for removal and refitting of a keyless propeller, with suitable sketches	9	L2	2	1.4.1
	(b) Briefly describe the inspection and maintenance carried out on ships' hull in dry dock.	6	L2	2	1.4.1
V.	(a) Explain different parts of an anchor chain and the testing and maintenance carried out.	10	L1	3	1.4.1
	(b) Briefly describe bad weather precautions taken on board.	5	L2	3	1.4.1
OR					
VI.	(a) Describe various types of vibration on ships, their sources and effects.	8	L2	3	1.4.1
	(b) Briefly describe the noise suppression methods in design and operation of ships.	7	L2	3	1.4.1

(P.T.O.)

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		Marks	BL	CO	PI
VII.	(a) Briefly describe MARPOL convention and its annexes.	6	L2	4	1.4.1
	(b) Explain working of a simplex turbulo-separator with suitable sketch.	9	L2	4	1.4.1
OR					
VIII.	(a) Explain working of an oil content meter used in oily water separator.	8	L1	4	1.4.1
	(b) Briefly describe machinery space bilge and oily water discharge criteria as per MARPOL Annex I.	7	L2	4	3.1.4
IX.	(a) Describe various additives used in lubricating oil and their effects.	9	L1	5	3.1.4
	(b) Briefly describe the theories of lubrication.	6	L1	5	2.4.4
OR					
X.	(a) Using suitable sketch, explain working of an oil mist detector used in a large two stroke marine engine.	9	L1	5	1.4.1
	(b) Briefly discuss the importance of Lub oil tests in monitoring engine condition.	6	L2	5	1.4.1

Bloom's Taxonomy Levels

L1 = 38.6%, L2 = 58%, L3 = 3.4%.
