

Reg. No.

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B. E / B. TECH.DEGREE EXAMINATIONS, MAY 2023

Fourth Semester

MR18404-MARINE BOILERS, STEAM ENGINES AND TURBINES*(Marine Engineering)***(Regulation 2018A)****TIME: 3 HOURS****MAX.MARKS: 100**

- CO1** At the end of the course the students will have the knowledge & understanding of Construction of various types of boilers
- CO2** At the end of the course the students will have the knowledge & understanding of Boiler safety and the boiler fed system
- CO3** At the end of the course the students will have the knowledge & understanding of Combustion in boilers
- CO4** At the end of the course the students will have the knowledge & understanding of Operation and maintenance of boiler
- CO5** At the end of the course the students will have the knowledge & understanding of Operation and maintenance of the steam turbines.

PART- A (10x2=20Marks)

(Answer all Questions)

		CO	RBT LEVEL
1	What are the advantages of water tube boilers?	1	2
2	What do you understand by the term composite boiler?	1	2
3	What is the purpose of doing boiler gauge glass blow down?	2	2
4	What is the purpose of hot well in boiler?	2	2
5	What is the purpose of laying refractory bricks in boilers?	3	2
6	What are the different types of oil burners used in boilers?	3	2
7	What is meant by accumulation test with respect to boiler safety valve?	4	2
8	Why soot blowing of boilers is necessary?	4	2
9	Why warming up of turbine is to be carried out before starting?	5	2
10	What are the causes of vibration in steam turbines?	5	2

PART- B (5x 14=70Marks)

	Marks	CO	RBT LEVEL
11(a) Sketch and describe the construction and working of Babcock and wilcox boiler.	(14)	1	3
(OR)			
11(b) Sketch and describe the construction and working of double evaporation type boilers.	(14)	1	3
12(a) (i) Sketch and describe Pneumatically operated three element water level control system.	(10)	2	3
(ii) Explain the procedure of blowing through the gauge glass in boiler.	(4)	2	3
(OR)			
12(b) Sketch and describe construction and working of improved high lift safety valve.	(14)	2	3
13(a) Sketch and describe a Rotary cup type oil burner.	(14)	3	3
(OR)			
13(b) Sketch and describe the construction and working of soot blowing unit.	(14)	3	3
14(a) Explain in detail about the process of raising steam from cold on a scotch boiler.	(14)	4	3
(OR)			
14(b) Enumerate the detailed procedure for opening up a boiler and carry out inspection during survey.	(14)	4	3
15(a) (i) Describe the procedure for warming up the steam turbine before putting in to operation.	(10)	5	3
(ii) State the harmful effects of not following the proper procedure.	(4)	5	3
(OR)			
15(b) Sketch and describe the construction and working of Impulse and reaction steam turbine.	(14)	5	3

PART- C (1x 10=10 Marks)

(Q.No.16 is compulsory)

	Marks	CO	RBT LEVEL
16 Analyze the different types of steam turbine with Pressure and velocity compounding.	(10)	5	4
