

**INDIAN MARITIME UNIVERSITY**  
**Time Bound Assignment September/October 2020**  
**B Tech (ME) Arrear Examinations**  
**Marine Boiler Steam Engineering**  
**(UG11T2402)**

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Date: 23/09/2020

Maximum Marks: 70

Time: 3 Hrs

Pass Marks: 35

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**PART -A**

(10x2= 20 Marks)

(All Questions are compulsory)

1. How boiler gauge glass is blown through ? **(2 Marks)**
2. List advantages & disadvantages of smoke tube boilers. **(2 Marks)**
3. What do you mean by gusset stays? **(2 Marks)**
4. Discuss three common problems that can arise in the operation of marine boilers. **(2 Marks)**
5. List out mountings fitted on boiler. **(2 Marks)**
6. Explain any two Non-Destructive tests carried out on boiler plates. **(2 Marks)**
7. Explain the importance of main & thrust bearing of steam turbine. **(2 Marks)**
8. Explain pressure lubrication of steam turbine. **(2 Marks)**
9. State reason of warming up a steam turbine plant. **(2 Marks)**
10. Explain vibration in marine steam turbine. **(2 Marks)**

**PART - B**

**(5x10 = 50 Marks)**

(Answer any 5 of the following)

11. Sketch and describe a waste heat recovery system including an exhaust gas boiler, capable of supplying the auxiliary steam requirements of a motor ship. **(10 Marks)**
12. Sketch and describe Cochran Boiler. **(10 Marks)**

13. (a) Sketch and describe an improvised high lift safety valve. **(8 Marks)**  
(b) Explain the purpose of air vent valve on a boiler. **(2 Marks)**
14. Discuss, with the aid of sketches, the action of a stream of steam as it passes (a) through the moving blades of an impulse turbine, and (b) through the moving blades of a parsons reaction turbine. **(5+5 Marks)**
15. Explain, with the aid of suitable sketches, the method of construction used for turbine diaphragm nozzles. **(10 Marks)**
16. Sketch and describe a lubricating oil system for a typical steam turbine and reduction gear propulsion plant. **(10 Marks)**
17. Sketch and describe a turbine drain system and explain why it is necessary to have such an arrangement. **(10 Marks)**

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