

Indian Maritime University
(A Central University, Govt of India)
End Semester Examinations June-July 2019
B. Tech (Marine Engineering)
Semester-IV
Marine Boilers (UG11T3401)

Date: 24-06-2019
Time: 3 Hrs

Max Marks:100 Marks
Pass Marks:50 Marks

PART-A

Marks: 10x3=30

(All questions are compulsory)

1.

- (a) Explain the function of Screen tubes in a water tube boiler.
- (b) What is the purpose of Attemperators and Desuperheater in a boiler.
- (c) Explain the function of easing gear.
- (d) Why Soot blowers are fitted in boilers.
- (e) What is the purpose of fitting Deaerator on boiler feed system?
- (f) Why air ejectors are fitted in closed feed system of the boiler?
- (g) Why adequate and regular blow down of boiler is essential ?
- (h) What is source of the contamination of oil in the boiler water and what are good practice to detect the source of oil contamination in the boiler?
- (i) What are the limitations of pressure jet burner in the boiler?
- (j) What are the advantages of roof firing over side firing in boiler?

PART-B

Marks: 5x 14=70

(Answer any FIVE of the following)

- 2.(a) What are the reasons for adopting water tube boiler instead of smoke tube boiler? (7 Marks)
- (b) Sketch and describe Spanner Boilers. (7 Marks)
- 3.(a) What is the purpose of Steam Drum, Water Drum in a water tube boiler? (7 Marks)

- (b) Sketch and Describe Water Walls. (7 Marks)
- 4.(a) Sketch and Explain the working of Double Evaporation Boiler. (7 Marks)
- (b) Sketch and Describe the working of Cochran Exhaust Gas Composite Boiler. (7 Marks)
- 5.(a) Write short notes on Economiser. (7 Marks)
- (b) List out all the boiler mountings and indicate the purpose of each mounting. (7 Marks)
- 6.(a) Sketch and Describe the working of Improved High Lift Type Safety Valve. (7 Marks)
- (b) What is the purpose of Boiler water testing? What are the tests carried out on the boiler water? (7 Marks)
- 7.(a) What are the general maintenance carried out on the Boilers. (7 Marks)
- (b) What is the purpose of refractory in the boiler? What are the types of refractory failure? (7 Marks)
- 8.(a) Sketch and describe a pressure jet fuel oil burner. (7 Marks)
- (b) Describe a procedure for carrying out a hydraulic test on water tube boiler. (7 Marks)
