

CBCS Scheme

USN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

15MR52

Fifth Semester B.E. Degree Examination, Dec.2017/Jan.2018

Marine Internal Combustion Engines – I

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

- 1 a. Explain valve timing diagram of 4-stroke engine with neat sketch. (10 Marks)
b. Explain heat balances diagram with neat sketch. (06 Marks)

OR

- 2 a. With a neat sketch, explain the deviation from ideal condition on an actual engine. (08 Marks)
b. Write a brief note comparing medium speed, slow speed and high speed diesel engines. (08 Marks)

Module-2

- 3 Explain briefly the construction details of the following :
i) Cylinder head and fitting
ii) Piston
iii) Bedplates and A-frames
iv) Crankshaft and bearings. (16 Marks)

OR

- 4 a. Why is it necessary to cool the cylinder heads, cylinder liner and pistons of diesel engines? (10 Marks)
b. Write a note on cooling water testing and treatment. (06 Marks)

Module-3

- 5 a. Explain various types of scavenging in 2-stroke engines and also state its merits and demerits. (12 Marks)
b. Define super charging or pressure charging. (04 Marks)

OR

- 6 a. With a neat sketch, explain pulse type turbo-charger. (10 Marks)
b. State and explain why scavenging is not the same for both two stroke and four stroke engines. (06 Marks)

Module-4

- 7 a. Define uptake fire. Write the causes, prevention and action to be taken during uptake fire. (10 Marks)
b. Define compression pressure ratio and its effects on engines. (06 Marks)

OR

- 8 Write a note on :
a. Prevention of scavenge fire
b. Scavenge space protection devices
c. Indication of scavenge fire. (16 Marks)

15MR52

Module-5

- 9 Write a note on
- Hydro dynamic lubrication
 - Hydro static lubrication
 - Boundary lubrication
 - Extreme pressure lubrication.

(16 Marks)

OR

- 10 a. How will lubricating oil degradation be noticed and what will be its effects.
b. Explain any one type of lubrication in detail with neat sketch.

(08 Marks)

(08 Marks)
