

**INDIAN MARITIME UNIVERSITY**  
(A Central University, Government of India)

**End Semester Examination December 2017**

**Programme:** B.Tech (Marine Engineering)

**Semester:** VI

**Subject Name:** Marine Internal Combustion Engine -II

**Subject Code:** UG11T2602/1602

**Date:** 22.12.2017

**Maximum Marks:** 100

**Time:** 3 hours

**Pass Marks:** 50

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**Part – A**

**All questions are compulsory (3 X 10 = 30 Marks)**

1. a) What do you mean by critical speed range?
- b) Explain importance of bursting disc in starting air system.
- c) Explain principle function of starting air distributor.
- d) What is effective stroke of a fuel pump?
- e) Name the two type of engine indicator and briefly explain.
- f) What are the properties required for four stroke diesel engine sump oil?
- g) Explain function of "Tie Bolts"
- h) State the various methods used for changing fuel injection timing for reversing diesel engines?
- i) What do you mean by "Slow Down" and "Shut Down" of main engine? Give one parameter of main engine which cause these functions.
- j) Explain isochronous governor.

**Part - B**

**Answer any five of the following seven questions (5 X 14=70 Marks)**

2. a) List the forces, moments and its effect which may come in a vertical multi-cylinder diesel engine. (8)
- b) How does a viscous damper work, describe with sketch? (6)
3. Sketch and explain the principle of operation of a port controlled jerk type fuel pump. (14)
4. a) Sketch and describe an Air Starting line system of a marine propulsion engine. (8)
- b) How can you identify a leaking starting air valve on the cylinder head, of a running engine? (6)
5. a) Sketch and describe a lubricating oil system of a large two propulsion engine giving the salient temperatures and pressures at different stages. (8)
- b) Discuss Function and types of additives used for improving lo properties. (6)
6. a) Make a list of causes of piston ring failures which may result in gas leakage or ring breakage. (10)

- b) Explain microbiological degradation of fuel oil. (4)
7. a) In respect of speed control governor explain the following:
- i) Sensitivity ii) Droop (3+3)
- b) Explain working function of electronic governor. (8)
8. Discuss latest technologies incorporated in development of large two stroke marine diesel engine. (14)

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