

Fifth Semester

MR18502-MARINE DIESEL ENGINE -II

(Regulation 2018)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 marks)

1. Lubrication lube oil used in marine engines for
 1. Lubrication
 2. Heat removal
 3. Carbon removal
 4. All above
2. Air starting valve is fitted in cylinder head for
 1. Starting the engine
 2. Reversing starting
 3. Remote starting of the engine
 4. All above.
3. Turning gear interlock is
 1. One of the safety device in the starting air system
 2. One of the safety device in JCW system
 3. One of the safety device in scavenge air system
 4. None of the above
4. Governor is installed in marine engine for
 1. Controlling the engine speed.
 2. Controlling the engine oil pressure
 3. Controlling the fuel oil pressure.
 4. None of the above.
5. Write down the purpose of cylinder lubrication system in two stroke marine diesel engine?
6. List out the main components of starting air system in four-stroke diesel engine.
7. What is barred range of speed? How it has been taken care in main engine system?
8. What is PLS ? where it is used?

PART B - (4 X16 = 64 marks)

09. (a) (i) How the properties of main engine crankcase oil is helping the two stroke marine diesel engine? **(8)**
- (ii) Describe the lube oil sampling procedure and Explain various tests are being carried out in lab analysis and its minimum limits. **(8)**

(OR)

- (b) (i) Onboard your ship steering gear system oil contaminated with water, briefly write the cause and remedy. Choose correct grade of oil used in steering gear system with all necessary properties. **(10)**
- (ii) Write the main properties of oil used in ship refrigeration and air conditioning system. **(6)**

10. (a) (i) With the help of line diagram, write the sequence of reversing (8)
operation of two-stroke B&W diesel engine.
- (ii) State the various safety equipment installed in B&W marine main (8)
propulsion engine. How it protects the engine from major damages
while running in full load conditions?

(OR)

- (b) (i) Explain the indicator diagram, how can you find the various faults in (8)
the engine combustion system and how it will affect the engine overall
performance?
- (ii) How fuel oil is injected in to the combustion chamber of four-stroke (8)
diesel engine? What all are the test carried out in fuel valves, make use
of the drawing and explain?
11. (a) (i) How the load of medium speed generator is controlled invariably by (8)
changing ship load during cargo discharge operation?
- (ii) With the line diagram, Explain the method of controlling the diesel (8)
engine speed by using any one electrical or mechanical instrument.

(OR)

- (b) (i) In cross head type main engine, how the oil-cooled piston gets (8)
lubrication? Justify the importance of piston rings and its clearance.
- (ii) In two stroke marine diesel engine, list out the possible reasons for (8)
wear down of cylinder liner, maximum wear down limits and
measuring methods?
12. (a) (i) What do you understand by unmanned machinery ship? How will you (8)
change over to unmanned condition? What all are the precautions to be
taken before going in to UMS state?
- (ii) Compare the MC and ME series of marine diesel engine. (8)

(OR)

- (b) (i) How the common rail fuel injection system supersede the jerk fuel oil (8)
pump system? List out the major components renewed and replaced in
RT-Flex intelligence marine main engines.
- (ii) How will operate the RT-Flex engine exhaust valve, fuel pump, at (8)
minimum load operation? route out the possible running the engine at
very low RPM.