

GANPAT UNIVERSITY

B. Tech. Semester: VI (Marine) Engineering

Regular Examination April – June 2015

2MR 603 Marine Internal Combustion Engine-II

Time: 3 Hours

Total Marks: 70

- Instruction:** 1 Attempt all Questions.
 2 Assume suitable data if necessary.
 3 Figure to the right indicates full Marks.
 4 Start new Question on New Page.

Section - I

- Que. – 1**
- | | | |
|---|--|---|
| a | Describe a starting air system fitted to an auxiliary engine, explaining how it operates | 4 |
| b | Describe THREE safety devices fitted in a starting air system | 4 |
| c | Explain why water must be drained from the starting air receiver. | 2 |
| d | State why the internal surfaces of the receiver are coated | 2 |

OR

- Que. – 1**
- | | | |
|---|--|---|
| a | Sketch a main engine fuel system(2 Stroke) | 6 |
| b | Define Following:
(1) CCAI
(2) Ignition Delay (With respect to Power card and DrawCard) | 6 |
- Que. – 2**
- | | | |
|---|--|---|
| a | Describe, with the aid of sketches, an electronic governor suitable for a main propulsion engine. | 4 |
| b | Explain how the governor described in above functions to increase fuel to the engine in the event of a load increase | 4 |
| c | TWO defects which can impair operation of the governor described above | 3 |

OR

- Que. – 2**
- | | | |
|---|---|---|
| a | Describe, with the aid of a sketch, EACH of the following:
(1) the operating principle of an hydraulic droop governor
(2) the difference between idling speed and droop | 8 |
| b | State, with reasons, the desirable properties of the operating fluid for an hydraulic governor | 3 |
- Que. – 3**
- | | | |
|--|---|----|
| | A six cylinder Two stroke diesel engine has a cylinder diameter of 690 mm and a stroke of 1060 mm. Calculate the total indicated power of the engine when the mean effective pressure in each cylinder is 5.3 bar and the speed is 112rev/min | 12 |
|--|---|----|

Section – II

- Que. – 4**
- | | | |
|---|---|---|
| a | How is wear in a cylinder liner measured? Give causes of liner wear. What is the effect of running an engine with more than the recommended maximum wear? | 6 |
| b | How is bedplate fastened to the hull structure? What are chocks and holding down bolts? | 6 |

OR

- Que. – 4 a Why is a chain used for camshaft drive of a diesel engine? Give the causes for loss of tension, what effect has this and how may it be compensated for? Give details of the maintenance required. 6
- b What materials are used in the manufacture of piston rings for large slow speed running engine? How are these fitted with pistons? State the clearances that are necessary and reasons for these. 6
- Que. – 5 a Describe the operation required for removal of a piston and rod from a crosshead type engine. State what inspections and checks should be made. 6
- b Write down the procedure for removal of connecting shaft bottom end bearing. 5
- OR**
- Que. – 5 a Describe the procedure for removal of crosshead bearing 6
- b Describe how alignment of a diesel engine crankshaft may be checked through web deflection and recorded. 5
- Que. – 6 a State briefly the difficulties in lubrication of crosshead bearings in large two-stroke engines. What methods are employed to overcome these? - 6
- b Describe following: Hot and cold corrosion , microbial degradation of fuel and lubricating oil 6

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END OF PAPER