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***B. Tech. Degree VI Semester Examination in
Marine Engineering June 2016***

MRE 1604 MARINE INTERNAL COMBUSTION ENGINES II

Time: 3 Hours

Maximum Marks: 100

(5 × 20 = 100)

- I. (a) Explain how to take draw cards and power cards. (10)
 (b) What are the defects identified from the diagram and how to calculate BHP? (10)
OR
- II. (a) What are the properties required for marine diesel engine lubricating oil? (10)
 (b) Explain the types and use of lubricating oil additives. (10)
- III. (a) Explain the type of marine diesel engines used for power generation and justify. (10)
 (b) What are the consequences of using poor quality residual fuel? (10)
OR
- IV. How the NOX is controlled in marine diesel engine and what are the improvements made in diesel engines to increase Time Between Overhauls (TBO)? (20)
- V. Explain what are the checks and maintenance to be carried out on main engine piston rings. (20)
OR
- VI. What are the changes made in the MAN B & W camless engine compared to older engine and its merits? (20)
- VII. Explain with sketch the working of compressed air motor. (20)
OR
- VIII. (a) Describe principles of centrifugal compression and pressure rise in centrifugal compressor. (10)
 (b) Explain what is pre-whirl and pre-whirl vanes. (10)
- IX. Explain complex cycle and closed cycle operation of gas turbines. What are the merits and de-merits? (20)
OR
- X. Write short notes on: (20)
 (i) Constant and over speed governors.
 (ii) Multi stage centrifugal compressor.
 (iii) LAPP certificate.
 (iv) Engine crankshaft deflection measurement.