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**B.Tech. Degree VI Semester Regular/Supplementary Examination in  
Marine Engineering April 2021**

**MRE 1604 MARINE INTERNAL COMBUSTION ENGINES-II  
(2013 Scheme)**

Time: 3 Hours

Maximum Marks: 100

- (5 × 20 = 100)
- I. (i) Sketch and described an indicator instrument and explain how indicator diagrams are taken. (14)
- (ii) Explain the following terms. (6)
- (i) Draw cards
- (ii) Out of phase diagram
- (iii) Light spring diagram
- OR**
- II. Sketch and describe a starting and reversing system of a large 2 stroke Marine Diesel engine. Explain the safety feature provided in the system. (20)
- III. Sketch and describe the working principle and operation of a hydraulic governor and explain the terms hunting gear and speed droop. (20)
- OR**
- IV. What is mean by intelligent engine? What are the advantages these engines have over the conventional engines? (20)
- V. What are the causes of crank shaft misalignment? Describe method of checking crankshaft alignment and how readings are recorded? (20)
- OR**
- VI. (a) Explain following terms. (10)
- (i) IAPP certificate
- (ii) Hot and cold corrosion
- (b) Explain what are the inspections carried out during overhauling of an engine to decide the condition of (10)
- (i) Piston rings
- (ii) Cylinder liner
- VII. Sketch and describe a rotary type of air compressor and compare the same with reciprocating compressor for starting air duties of main engine. Why intercoolers are provided in compressors? (20)
- OR**
- VIII. Sketch and describe a centrifugal compressor and explain the function of pre-whirl vanes? (20)
- IX. Explain with a neat sketch the construction and design feature and working of a Gas turbine plant. (20)
- OR**
- X. (a) Explain joule-Brayton cycle gas turbine plant. (8)
- (b) Explain different methods adopted for improvement of thermal efficiency of Gas turbine plants. (12)