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***B.Tech. Degree V Semester Regular Examination in
Marine Engineering December 2021***

**19-208-0504 MARINE AUXILIARY MACHINERY II
(2019 Scheme)**

Time: 3 Hours

Maximum Marks: 60

- (5 × 15 = 75)
- I. (a) Sketch and explain any one type of Variable delivery type of pump used in steering gears. (8)
- (b) What are the stresses acting on a tail shaft? Explain the reasons for these stresses. (7)
- OR**
- II. (a) Sketch and describe an Oil lubricated stern tube for large vessel. (8)
- (b) Briefly explain the inspections required and maintenance schedule for a four ram steering gear system. (7)
- III. (a) List the different machinery related jobs that should be carried out during a planned dry docking of a vessel. (8)
- (b) Explain different inspections and maintenance works carried out on the Hull of a vessel during dry docking. (7)
- OR**
- IV. Write short notes on following: (15)
- (i) Calibration of anchor chains
- (ii) Rudder drop
- (iii) Pintle clearance.
- V. Write short notes on following: (15)
- (i) Bad weather precautions taken
- (ii) Maintenance of engine room stores
- (iii) Critical speed of engine.
- OR**
- VI. What are the various modes of vibration in a ship? Why such vibrations occur and what are it's effects? (15)
- VII. With a suitable figure explain the construction of an Oily water separator and describe its operational procedure. (15)
- OR**
- VIII. (a) Explain Marpol convention and its Annexes. (5)
- (b) What are the regular inspections done on an Aerobic type Sewage treatment plant? (5)
- (c) Use and need of an Oil Content Monitor onboard. (5)
- IX. (a) Explain use of additives in Lubricating oil. (8)
- (b) Explain Hydro dynamic lubrication. How it is achieved? (7)
- OR**
- X. (a) Explain various properties required for crank case and Cylinder lubricating oils used in large diesel engines. (8)
- (b) What are the usual ways of evaluating the suitability of Lubricating oil for continual use? (7)