

**B.Tech. Degree V Semester Examination in Marine Engineering
March 2008**

MRE 505 MARINE AUXILIARY MACHINERY II

Time: 3 Hours

Maximum Marks: 100

- I a) Sketch and explain the operation of a 2 - Ram steering gear system. (12)
b) Explain with sketch how the hunting action of the steering gear is controlled. (8)
OR
- II a) Sketch and explain an oil cooled stern tube bearing. (12)
b) Discuss the constructional details of a thrust block used onboard ships. (8)
- III a) What are the inspections and routine overhauling of underwater fittings and hull done in a dry dock? (12)
b) What are important precautions and safety measures you would take prior to dry docking. (8)
OR
- IV Write short notes on:
i) Incinerators used onboard (5)
ii) Sewage Treatment Plant of a ship (5)
iii) Anchor chain, its testing and survey requirements (5)
iv) Hull protection arrangements (5)
- V What are the various modes of vibration in a ship? How do you measure the noise level in a ship? (20)
OR
- VI Write short notes on:
i) Elements of a aero dynamics and hydrodynamics sound (5)
ii) Resonance and critical speed (5)
iii) Structure borne and air borne vibration (5)
iv) Detuners (5)
- VII a) Describe in detail the different sources of fuel and refining of process of crude oil. (12)
b) Explain the merits and demerits of residual fuel and emulsified fuels on marine engine. (8)
OR
- VIII Explain in detail residual fuel and emulsified fuels used in marine engine. Explain the methods of fuel treatments carried onboard a ship. (20)
- IX Write short notes on:
i) Theories of lubrication (5)
ii) Additive oil and their specific use (5)
iii) Properties of lubricants (5)
iv) Loading pattern of various bearings used onboard (5)
OR
- X a) Explain in detail the various analysis of lubricating oil carried out. (10)
b) Explain the theories of lubrication and the properties of various lubrications used onboard ships. (10)

