



UNIVERSITY OF RUHUNA

Faculty of Engineering

Mid - Semester 7 Examination in Engineering: June 2014

Module Number: ME 7333

Module Name: Advanced Marine Engineering

[Two Hours]

[Answer all questions, each question carries *five* marks]

Clear labeled sketches will be given credits

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- Q1. (a) Make a simplified sketch of an oil lubricated stern tube and explain its operation. [2 Marks]
- (b) With reference to a transmission line, identify the stresses to which individual shafts are commonly subjected to. [1 Mark]
- (c) State with reasons why
(i) Transmission line is angled downwards?
(ii) Leaving the oil tank open to the stern tube. [1 Mark]
- (d) Distinguish the constructional and operational difference between forward and aft. plummer blocks fitted to the aftermost intermediate shaft in a transmission line. [1 Mark]
- Q2. (a) State the types of Marine Compressors and their classification. [1 Mark]
- (b) Describe the unloading of compressors with justification and its contribution for smooth operation of them. [1 Mark]
- (c) Prepare a list of checks to be carried out before starting an air compressor. [1 Mark]
- (d) State with reasons the problems associated with bumping clearance and the implications of inadequate attention to those problems.
(i) Significance of the Bumping Clearance.
(ii) How to check the Bumping Clearance?
(iii) How to Adjust the Bumping Clearance? [2 Marks]
- Q3. (a) Draw valve timing diagrams for Two and Four stroke Marine diesel engines indicating lead, lag and overlaps. [2.5 Marks]
- (b) State the types of scavenging and explain them with sketches. [1 Mark]

..... Question Q3 is continued from page 1

- (c) State causes for crankshaft deflection and procedure to be followed in measuring crank shaft deflection.

[1.5 Marks]

Q4. Draw line diagrams of the following pumping systems and explain the contribution of each and every item.

- (i) A fuel oil supply system for a two stroke diesel engine.

[2.5 Marks]

- (ii) A fresh water cooling system.

[2.5 Marks]

PART - B

- Q1
- a) State the five ways to optimize the bandwidth in Wide Area Network (WAN).
 - b) Briefly describe the two types of Virtual Private Networks (VPN) according to the connectivity option.
 - c) What are the modules of Cisco enterprise architecture? Explain them.
 - d) Briefly describe the Cisco SONA (Service Oriented Network Architecture) framework and its layers.
 - e) State five benefits of SONA framework and briefly describe three of them.
 - f) Explain what is policy-based routing.

[10 Marks]