

THE HONG KONG POLYTECHNIC UNIVERSITY

DEPARTMENT OF MARITIME STUDIES

Course : Post experience Diploma in Ship Command
Subject : Ship Technology
Class : PeDSC Part B
Session : 1996/97
Date : 26 May 1997
Time allowed : 3 hours

Instructions to Candidates : Attempt Questions 1, 2 and 3 and any four of the remainder.

This paper has nine questions.
Minimum pass marks 50%.

Available from :
Invigilator

Marine Engineering

A1. A general cargo ship has a loaded displacement of 12,000 tonnes. When steaming at 14 knots from port A to port B the fuel oil capacity of 695 tonnes results in a margin of 62 tonnes.

On the return voyage from B to A with a displacement of 9,000 tonnes, the speed is maintained at 14 knots for the first half of the voyage. What is the maximum speed for the remaining distance if the margin is to remain the same?

(20 marks)

Ship Construction

A2. (a) List six of the causes considered most likely to have led to the loss of bulk carriers.

(b) State which structural parts should be given particular attention during inspections/surveys.

(20 marks)

Control Systems

A3. (a) Describe the three main disadvantages when using controllable pitch propellers.

(b) Describe, with the aid of an appropriate diagram, the remote control system for a controllable pitch propeller.

(20 marks)

Marine Engineering

B4. Outline the procedure to be followed in the event of discovering a scavenge fire. (10 marks)

Marine Engineering

B5. List the properties of a primary refrigerant and state why they are essential in the operation of a refrigeration cycle. (10 marks)

Control Systems

B6. Describe an automatic sprinkler system of a merchant ship with the aid of an appropriate diagram. (10 marks)

Ship Construction

B7. Sketch a transverse section of a bulk carrier constructed with combined framing and label the main structural members. (10 marks)

Ship Maintenance

B8. Draw up a task-list in respect of safety for ship's crew in dry dock. (10 marks)

Ship Maintenance

B9. Describe in brief the possible causes of paint failure. (10 marks)

- End -