

HONG KONG POLYTECHNIC  
CENTRE FOR MARITIME STUDIES

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Course : Post experience Diploma in Ship Command  
Class : Part A  
Session : 1993/94  
Subject : Navigation (Referral)  
Date : 10 January 1994  
Time allowed : 3 hours

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Instructions to Candidates : This paper contains TWO sections, A and B

Section A contains THREE questions.  
Attempt ALL three questions.  
Questions in Section A have equal marks and are each worth 20%.

Section B contains SIX questions.  
Attempt any FOUR questions.  
Questions in Section B have equal marks and are each worth 10%.

Minimum pass marks 60.

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Section A

- A1. (a) In the Global Positioning System, what is the principle used to derive the ship's position.
- (b) How does the Global Positioning System configuration implement this principle for providing the marine user with a position finding capability.
- A2. Explain the formation and characteristics of the following types of fog. State when and where each is likely to be encountered.
- (a) Radiation fog
- (b) Advection fog
- (c) Sea smoke.
- A3. In a search and rescue situation involving several vessels an OSC (on-scene commander) or a CSS (Co-ordinator of Surface Search) will be appointed.
- (a) Distinguish between these and describe their duties.
- (b) State the factors which will be taken into consideration in appointing a CSS when several vessels are involved.

Section B

- B4. Describe the processes of detection, acquisition and tracking in the context of a Radar meeting the IMO ARPA specifications.
- B5. According to SOLAS Chapter V, Safety of Navigation, there are certain occasions that the Master of a ship shall make reports concerning the safety of navigation.
- (a) State the occasions when you would make such reports.
  - (b) List the information you would include in your report if you have sighted a floating container which you consider dangerous to navigation.
- B6. Explain the occurrence of "cold" and "warm" anticyclones. State the season and locations in which they usually exist and describe the weather associated with each.
- B7. Describe the effects on the manoeuvring characteristics of a deep laden vessel when in :-
- (a) Shallow water
  - (b) Confined channels in close quarters with another ship.
- B8. Compare the Decca and Omega hyperbolic navigation systems in terms of the principle of operation, errors, coverage areas, and propagation modes.
- B9. Describe a procedure to follow on board ship to produce a curve of deviations for a standard magnetic compass. Outline the precautions to be observed during the process.

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