



SEAGOING DECK OFFICER CLASS 1 & CLASS 2

CERTIFICATE OF COMPETENCY

PAPER 4

SHIPBOARD OPERATIONS

Time Allowed: 3 hours

INSTRUCTION :-

This paper contains NINE questions where

Candidates should answer question 1, 2 and 3 plus any other FOUR questions from the remainder.

Questions do not carry equal marks and candidates are advised to allocate their time accordingly.

The total mark for this paper is 100 and the passing mark is 60 (60%).

CANDIDATES ARE NOT ALLOWED TO WRITE ON OR DEFACE THIS PAPER

This paper consists of this page and FOUR other printed pages.

Notes to Candidates:-

- i) Write down your name in the top right-hand corner on the first page of the answer sheets.
- ii) Write down the question number in the top left-hand corner on each page.
- iii) Answer each question on a new page.
- iv) No need to copy the questions' details onto the answer sheets.
- v) **Switch off all your mobile phones and communication devices when in the examination room.**
- vi) **Return all the question paper(s), the used and unused answer sheets before leaving the examination room.**
- vii) **Do not disturb other candidate(s) in the examination room.**
- viii) **Do not attempt to take any photos or recordings of any question papers and/or answer sheets.**
- ix) The progress of the examination is being recorded by close-circuit television (CCTV) and voice recorders in the examination room.

If the above rules from item v) to viii) are infringed, candidates will be regarded as having failed the examination as a whole and will not be accepted for re-examination for such period as may be decided by the Director.

考生注意事項：-

- i) 在答題紙首頁右上角寫上姓名。
- ii) 在每頁答題紙的左上角標明回答的問題題號。
- iii) 每一條問題另開新頁作答。
- iv) 不需要抄寫問題到答題紙上。
- v) 進入試場後，把手機及所有通信設備關閉。
- vi) 離開試場前，交回所有試卷、所有用過和未用過的答題紙及草稿紙。
- vii) 試場內不可干擾其他考生。
- viii) 切勿嘗試拍攝或錄取任何試卷或答案。
- ix) 考試期間試場內會有閉路電視(CCTV)和錄音系統進行記錄。

如果違反上述 v) 至 viii) 規則，即當作所有考試不及格，以及在處長決定的期間內不得重考。

Candidates should answer question 1, 2 and 3 plus any other FOUR questions from the remainder.

1. (a) According to International Maritime Solid Bulk Cargoes (IMSBC) Code, bulk cargos are divided into 3 groups, i.e, Group A, B and C. What are the definitions for Group A, B and C?
- (b) Explain the risk of loading Group A cargo and the procedures to load Group A cargo for a safe from loading port to discharge port, give 2 typical Group A cargo names.

(20 marks)

2. M.V. Examiner-1 is loaded and ready for departure at a displacement of 4,800 tonne and with a KG of 5.96 m after allowance for free surface.

- (a) Using the information available in the stability booklet prepare a curve of static stability for the vessel in this condition.
- (b) Explain what is meant by dynamical stability and static stability
- (c) Calculate the vessel's dynamical stability to 35 degrees heel in this condition.
- (d) Why we need to draw study to dynamical stability? Outline the effects on improper stability which can lead to an accident of capsizing and which can lead to a loss in heavy weather conditions.

(20 marks)

3. (a) State the stability requirement of bulk carrier vessel loading grain and how to meet the requirement in practical operation.
- (b) Why we separate the holds loading condition as “Full” and “Slack” ? What is the difference of them when we calculate the grain stability?

(20 marks)

Candidates should answer any FOUR questions from the following:

4. Briefly describe the following classes of bulk carrier:

- (i) Handymax
- (ii) Ultramax
- (iii) Post-Panamax
- (iv) VLOC

(10 marks)

5. An empty box shaped barge 50m x 8m is floating at an even keel draught of 4 metres in fresh water. It is divided transversely into five equal compartments which were uniformly loaded, as follows:

No. 1	100 tonnes	No. 2	200 tonnes
No. 3	230 tonnes	No. 4	120 tonnes
No. 5	160 tonnes		

Draw the curve of load and from it derive the points of minimum and maximum shearing force and bending moments.

(10 marks)

6. (a) According to IMDG (International Maritime Dangerous Goods) Code, how the dangerous are classified?
- (b) Explain the procedures and what necessary certificate/document needed to be prepared for shipping a dangerous cargo.

(10 marks)

7. (a) Explain the functions of the transverse bulkhead for the cargo hold of bulk carriers.
- (b) IMO adopted a resolution A 744 (18) in 1994 SOLAS conference with guidelines on the Enhanced Survey Programme (ESP) for inspection and surveys of bulk carriers and tankers. What is the scope of ESP?

(10 marks)

8. List the details of the requirement for ships carrying New Zealand logs deck cargoes, with regard to:

- (a) stowage
- (b) securing

(10 marks)

9. Explain the Crude Oil Washing (COW) and the procedures of COW with necessary sketch.

(10 marks)

- END -

SAMPLE