

CINEC CAMPUS (PVT) LTD.

Faculty of Maritime Sciences

Department of Navigation

EDUCATION &amp; TRAINING COURSE : Navigation Cadet Training Program – Phase III

COURSE CODE : ND- 0100 P3



REPEAT EXAMINATION – QUESTION PAPER

**GENERAL SHIP KNOWLEDGE**

- Answer all questions.
- Total Marks: 100

Date: ~~30.03.2023~~

01-04-2023

Pass mark 50%

Time allocated: 03 Hours

1

- Define what DWA is and prove Change of draft = Change of RD/0.025 x FWA
- A vessel displaces 16000t at her summer load draft in SW. If she is now floating in DW of RD 1.015 with her summer load line on the water, calculate how much DWT is available.
- With the help of sketches describe how unstable vessel may reach “Angle of Loll” condition.

(25 marks)

- On a vessel of 18000t displacement KM 8.9 m, KG 8.3m , a DB tank is partly full of FW. If the tan surface is rectangular, 20m long and 18m wide, calculate her fluid GM .

Moment of Inertia of a rectangular tan about its centre line = length x (breadth)<sup>3</sup>/12

(20 marks)

3.

- Define the term “List” illustrating the Angle of List, Metacenter and the shift of COB ,COG. Prove that ;

Tan  $\alpha$  = d x w/W.GM where; $\alpha$  = angle of list

dw= final listing moment in tonne metres

W = final displacement in tonnes

GM= final fluid GM in metres. (10 marks)

- Describe Stable and unstable equilibriums of a ship.

(15 marks)

4.

- With the aid of sketches describe a Transversely Framed Double bottom with cross sections in the way of Solid and Open/Bracketed floors. (15 marks)

- Sketch and describe a midship cross section of a Longitudinal framed ship.

(15 marks)



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FINAL EXAMINATION – QUESTION PAPER  
**Port Management and Operations**

- Answer all 05 questions
- Total Marks 100 – (each question carries 20 marks)
- Diagrams should be shown wherever possible

Date: ~~15.03.2023~~ (Afternoon)  
31.03.2023

Pass mark 50%

Time allocated: 3 Hours

**Question No. 01 (Compulsory)**

What are the current facilities &amp; status of the following Ports?

- |                         |                  |
|-------------------------|------------------|
| I. Port of Colombo      | (5 Marks)        |
| II. Port of Galle       | (5 Marks)        |
| III. Port of Hambantota | (5 Marks)        |
| IV. Port of Trincomalee | (5 Marks)        |
|                         | [Total 20 Marks] |

**Question No. 02**

“Colombo Port Expansion Project today call as Colombo South Harbour”

- |  |                  |
|--|------------------|
| a) Why Port of Colombo went for an expansion and give reasons? | (10 Marks)       |
| b) What are the salient features of the project?               | (5 Marks)        |
| c) Explain ECT & WCT   | (5 Marks)        |
|  | [Total 20 Marks] |

**Question 03**

- a) What are the Navigational Charges? (5 Marks)
- b) Name main Tariff items in the SLPA Tariff 2022? (5Marks)
- c) Name five different Liquid Bulk cargo types & briefly explain the operation? (5 Marks)
- d) Name five different Dry Bulk cargo types & briefly explain the operation? (5 Marks)

[Total 20 Marks]

**Question 04**

**Port of Hambantoata**

- a) Explain the Port Management? (5 Marks)
- b) What are the Navigational Facilities? (5 Marks)
- c) What are the Cargo Handling Facilities? (5 Marks)
- d) List out Tank Farm (Liquid Bulk Handling) Facilities? (5 Marks)

[Total 20 Marks]

**Question 05**

**“Container Terminal”**

- a) Explain why container terminals need planning? (4 Marks)
- b) What are the six types of terminal planning (4 Marks)
- c) Name four sizes/generations of STS Ship to Shore Gantry Cranes & how many containers across a ship can be handled? (8 Marks)
- d) Name four spreader attachments that fix to STS Gantry Crane? (4 Marks)

[Total 20 Marks]



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FINAL EXAMINATION - QUESTION PAPER  
**Introduction to Logistics**

- Answer 05 questions
- Question number 01 is compulsory
- Total Marks 100 - (each question carries 20 marks)
- Diagrams should be shown wherever possible

Date: ~~15.03.2023~~ (Morning)  
30.03.2023

Pass mark 50%

Time allocated: 3 Hours

**Q1.** Supply chain for agriculture production distribution in Sri Lanka is failing badly though the Govt has introduced the Economic Centers like Dambulla, Meegoda and Narahenpita etc. Fol are the basic principles of locating a distribution center, those are land, accessibility, infrastructure, planning and regulations, economies of agglomeration and internal multiplying factors.

Describe your view of Sri Lankan model of agricultural supply chain system in order to organize an efficient and fair system of trading for the producer and the customer.

( Marks 20)

**Q2.** Sri Lanka has one of the best ports in the region, with introduction of the south harbor the business might increase in many folds. Fol are the principle to be adhered to attract more shippers to the port, those are location, depth, land cost, hinterland and ownership.

Give your view to the Chairman of the ports authority to develop more maritime traffic to the Colombo port.

(Marks 20)

**Q3** The manufacturing function of many corporations has been hollowed out by the process of globalization, in which manufacturing accounts for one of the least added value activity. The massive entry of low cost manufacturers led to a high level of competitiveness in many production sectors, reducing profit margins as well as its overall level of contribution to added value. This led to a growing contribution and importance of the concept and logistics segments. Consequently, in a global production and consumption market R&D, branding and design can be a significant component of the added value function of a commodity chain. On the logistics segment, distribution, marketing and sales /after sales services are the activities generating the most added.

a. Describe how Sri Lanka should get rid of Manufacturing trap and move towards more value added functions like Logistics.

**(Marks 20)**

**Q4.** “World city concept” is an important concept for a country to achieve agglomeration via globalization.

a. Define “ World City Concept”

**(Marks 05)**

b. Describe five factors that is important in order to develop Colombo as a world city.

**(Marks 15)**

**Q5.** The country is entering to new modes of transportation as part of the ongoing development process. During the 18 th Century British governance introduced the railway system and the outcome was easy and cost effective transportation system which increased the profit margins of British trade. Also, still the rail travel is a high attraction to the international and local tourists, but at the moment this important transportation system is deteriorating due to various other reasons.

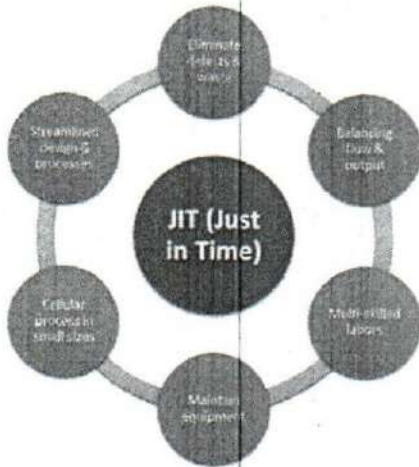
a. Briefly define what is slow train journeys, Charter, Monorails and auxiliary facilities.

**( Marks 05)**

b. You are the newly appointed Chairman of the Railway Department and propose your railway tourism transportation development options as an article to the Travel magazine.

**(Marks 15)**

- Q6. a. Describe the definition of Air to Sea and Sea to Air concept. (Marks 05)  
 b. What's advantage of the above to JIT applications and its operations? . (Marks 05)



- c. "Maththala Airport with Hambanthota Sea Port combination, in setting of Geo political advantage and the Circum equatorial route are ideal business principles for FDI s to open up manufacturing bases on JIT practices". Describe

(Marks 10)