	Utech
Name :	<u>A</u>
Roll No.:	A Day of Your Life 2nd Explana
Invigilator's Signature :	

CS/BNS/SEP.SUPPLE/SEM-5/BNS-502/2012 2012

SHIP OPERATION TECHNOLOGY-III

Time Allotted: 3 Hours Full Marks: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP - A

(Objective Type Questions)

- 1. Answer the following questions in brief: $10 \times 1 = 10$
 - i) Enlist various gauging (ullaging) devices.
 - ii) Which manual will be referred for safe stowage and securing?
 - iii) What is statement of acts?
 - iv) What is spontaneous combustion?
 - v) What is function of ESD?
 - vi) Enlist various types of cargo pumps.
 - vii) What is the differences between inerting and purging?
 - viii) Distinguish between displacement and dilution methods.
 - ix) What is SMPEP?
 - x) What are different container handling gears?

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GROUP - B



(Short Answer Type Questions)

Answer any *three* of the following.

 $3 \times 5 = 15$

- 2. a) Enlist various cargo documentation for loading bulk cargoes.
 - b) State various types of cargoes carried by multipurpose ships.
 - c) What is meant by ODC?

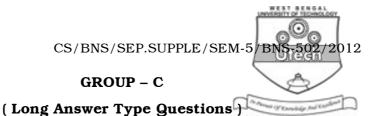
2 + 2 + 1

- 3. a) What markings do appear on a container?
 - b) What does the code APLU 4310 stand for?
 - c) Explain alternate hold loading.

2 + 2 + 1

- 4. a) How can the maximum amount of cargo to be loaded in a bulk carrier be calculated?
 - b) What is meant by grain?
 - c) State two main hazards with respect to carriage of grain. $3+1+1 \label{eq:continuous}$
- 5. With respect to IMDG explain the following :
 - a) Classification of IMDG cargoes
 - b) Emergency procedure
 - c) Carriage of explosives
 - d) Medical First-Aid Guide (MFAG).

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Answer any *three* of the following. $3 \times 15 = 45$

- 6. a) A crude oil tanker of LBP 250 m has a tank of dimensions length 30 m, breadth 20 m and depth 20 m and is trimmed 3 m by astern. The ullage port is in line with the aft bulk head and its height is 1·2 m above the deck. The ullage of the cargo as measured from ullage port is 2·2 m. Using a sonic tape, calculate net observed volume of oil and the quantity of oil. Given density of oil at 15°C = 0·8550, VRF = 0·9873 and loading temp. is 31°C.
 - b) What are the essential features of a container? What are the ISO dimension for a container? 10 + 5
- 7. a) A seven hold bulk carrier has been fixed to load grain in bulk. Describe the procedure that you will follow highlighting the special precautions to determine the following:
 - (i) Total quantity of cargo that can be loaded
 - (ii) Its hold-wise distribution
 - (iii) Compliance with stability criteria.

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- b) (i) What is TDM?
 - (ii) What is LNA?
 - (iii) What is the powder output of inmarsat SES?
 - (iv) How will you often update position on the DSC?
 - (v) What is the antenna impedance of the VHF DSC?

10 + 5

- 8. With neat outline diagrams, describe the functions of the following with respect to inert gas system of an oil Tanker:
 - a) Pressure/vacuum valve
 - b) Pressure/vacuum breaker
 - c) Deck seal
 - d) Purge pipe
 - e) Non-return value.

 5×3

- 9. a) What is ATU? Write its functions.
 - b) Which equipment is used for locating a ship? Describe the function of the equipment.
 - c) What is MF/HF DSC testing procedure? Describe how simplex and duplex in R/T works. 5 + 5 + 5

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