Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/BNS/SEM-5/BNS-502/2010-11

2010-11

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 briefly. 1 × 10

a) Why is pre cooling required in an LNG carrier ?

b) What are the hazards associated while loading heavy lifts ?

c) What is purging ?

d) What are the hazards associated with loading sulphur ?

e) Why SARTS operate in the frequency bands of 9 GHz.

f) What is the flammable limit for CH gas mixture of air will not burn ?

g) What is Chain Register ?

h) When wire rope will be condemned ?

i) What are the two main hazards associated with grains ?

j) What are the hazards associated with loading of coal ?

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. What is Document of Authorization (DOA) ? Without DOA can a ship load grain ? If so, explain it.
3. Explain with diagram the various types of segregations of IMDG Goods.
4. What are the carriage requirements for GMDSS ships in sea area A2.
5. A beam 3·0 m in length weighing 3 tonnes is lifted by two slings of length 2·5 and 2·0 m. The beam makes an angle of 20° when a wt. of 1·0 tonne is placed on it. Find its position and the tension in the slings.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

6. Describe with neat diagram the Inert Gas System (IGS) of a crude oil carrier.
7. A vessel of LBP 235 m has a tank of dimensions L 30 m × B 25 m × D 20 m is loading oil of density @ 15°C 0·8150. On completion of loading vessel is listed 1° to stbd and the ullage as observed using a sonic tape was found to be 1·8 m. Ullage part is located 3 m to starboard of the centerline and 1 m above the deck. Vessel is on even keel on completion and temperature of oil to observed to be 32°C. Calculate the quantity of oil.

8. a) With simple sketches explain the typical 'Bay Plan' of a container ship.

   b) What are the markings will you find on a Container ?

10 + 5

9. a) Explain with diagram Bundling and Saucering.

   b) What is the requirement in term of stability for carrying grain in bulk as per Grain Code. 6 + 9

10. a) What is MUF ? Name different factors on which MUF depends.

   b) What is designated and undesignated distress alert ?

   c) Describe Inmarsat–E EPIRB. 5 + 5 + 5