	<u> Viegh</u>
Name:	<b>A</b>
Roll No. :	In Parago (V Exercising 2nd Explored
Invigilator's Signature :	

# CS/MBA(NEW)/SEM-4/PLM-402/2010 2010

## CARGO HANDLING SYSTEMS MANAGEMENT

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 ( Multiple Choice Type Questions )

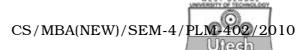
- 1. Choose the correct alternatives for any *ten* of the following :  $10 \times 1 = 10$ 
  - Union purchase system is an effective handling system of break bulk cargo weighing between
    - a) 1 to 2 tons
    - b) 2 to 3 tons
    - c) 3 to 5 tons.
  - ii) Level luffing crane can pick up a load from any point in the hatch and deposit anywhere in the quay, because it
    - a) rests on wheels on the quay and are usually tracked along the length of the quay
    - b) rests on wheels and crane jib can slew and luff
    - c) rests on wheels and has higher Safe Working Load (SWL).

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- iii) A gantry crane is usually associated with
  - a) bulk handling of raw materials
  - b) container handling
  - c) both (a) and (b).
- iv) Endless rope sling is used for
  - a) lifting containers
  - b) lifting wooden cases
  - c) lifting drums.
- v) A chain sling consists of a length of chain with
  - a) a ring on one end and a hook on the other
  - b) a link on each end
  - c) either of these.
- vi) Pallets for cargo handling are either
  - a) wooden platform or trays
  - b) wooden slopes or stairs
  - c) wooden steps or railings.
- vii) Containers are metal boxes measuring
  - a)  $8 \text{ ft} \propto 8 \text{ ft} \propto 20 \text{ ft}$
  - b)  $8 \text{ ft} \propto 8 \text{ ft} \propto 40 \text{ ft}$
  - c) both (a) and (b).
- viii) LASH (Lighter Aboard Ship) ships have a capacity of
  - a) 40,000 dwt and 70 barges of appx 400 tons cargo capacity each
  - b) 44,000 dwt and 73 barges of appx 400 tons cargo capacity each
  - c) 50,000 dwt and 75 barges of appx 400 tons cargo capacity each.



- ix) A radial loader has a bulk loading capacity of in excess of
  - a) 5,000 tons/hour
  - b) 10,000 tons/hour
  - c) 20,000 tons/hour.
- x) Modern grab type unloaders have a cycle time of between
  - a) 30 to 45 secs.
  - b) 45 to 60 secs.
  - c) 60 to 90 secs.
- xi) The forklift truck lifting capacity varies from
  - a) 1000 kg to 3000 kg
  - b) 1000 kg to 5000 kg
  - c) 1000 kg to 12000 kg.
- xii) "Ramped stillages" are used to
  - a) demount containers to a trailer
  - b) load containers in a hold
  - c) both (a) and (b).

#### **GROUP - B**

### (Short Answer Type Questions)

Answer any *three* of the following.

 $3 \times 5 = 15$ 

- 2. What are different conventional break bulk handling systems used in a port? Highlight their features.
- 3. What are LASH ( Lighter Aboard Ship ) Ships ? Explain in brief their features and advantages.
- 4. What is lighterage system of cargo handling in a port? Why is this preferred in some ports?

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- What are different unloading systems for bulk cargo in a 5. ? Specify their features and advantages ?
- What is the basic principle of container storage? 6. What methods are employed in loading a container property?
- 7. What is meant by stowage factor? What is broken stowage? Which cargo with occupy more space having less SF or more SF?

#### GROUP - C

(Long Answer Type Questions) Answer any three of the following.

- $3 \times 15 = 45$
- 8. What are main purposes of a Fork-lift track in a port ? Enumerate and briefly explain the common types of Fork-lift trucks used in a port?
- 9. What are the major influencing factors which determine the type of cargo handling equipment in a port? Briefly explain highlighting their influence.
- 10. "Turn around time" is a major factor today for sustainability of a port. For break bulk cargo, briefly explain the different methodology that can be adopted by a port to improve cargo flow.
- 11. Explain in brief different unloading systems as used in export berth for bulk cargo. What special care needed during operation of these unloaders?
- 12. Briefly explain with respect to container handling equipment:
  - Self-demounting pallets a)
  - Self-loading trailers b)
  - c) Mobile lift frames.