



UNIVERSITI KUALA LUMPUR
MALAYSIAN INSTITUTE OF MARINE ENGINEERING TECHNOLOGY

FINAL EXAMINATION
JANUARY 2017 SEMESTER

COURSE CODE : LGB11503
COURSE NAME : SHIP TECHNOLOGY
PROGRAMME NAME : BACHELOR OF MARITIME OPERATIONS (HONS)
(FOR MPU: PROGRAMME LEVEL)
DATE : 03/07/2017 MON
TIME : 9.00 AM - 12.00 PM
DURATION : 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. Please read **CAREFULLY** the instructions given in the question paper.
 2. This question paper has information printed on both sides.
 3. This question paper consists of **TWO (2)** sections; Section A and Section B. Answer **ALL** questions in Section A and **THREE (3)** questions from Section B.
 4. Please write yours answers on the answer booklet provided.
 5. Write your answers only in **BLACK** or **BLUE** ink.
 6. Answer all questions in English.
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THERE ARE 3 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 40 marks)

INSTRUCTION: Answer ALL questions.

Please use the answer booklet provided.

Question 1

- (a) The wind is a large scale movement of air caused by differences in atmospheric pressure between localities. List four effects of strong winds on a ship.
(4 marks)
- (b) The immersed volume of an iceberg is always greater than the volume above the water and increases with the age of the ice. Only 10% of the real size can be seen on the surface of the water and the other part remains under surface of water. Relate the effects of iceberg on maritime activities.
(4 marks)
- (c) Land and sea breezes are the two breezes occur along coastal areas or areas with adjacent large water bodies. Differentiate the phenomenon of land and sea breezes.
(6 marks)
- (d) Tides will be happen when the moon exerts about twice the pull of the sun since it is so much nearer to the earth. Briefly describe spring tides and neap tides.
(6 marks)

Question 2

- (a) Marine vessels are a vital element in the modern world. She still carries some 90% of trade around the world. Identify the principle of marine vessel.
(4 marks)
- (b) The liquid cargo ship is a vessel designed to carry and transport cargo in liquid form. Describe four types liquid cargo ship.
(8 marks)
- (c) A ship structure usually consists of a network of plates and supporting structure. The supporting structure consists of large members running both longitudinally and transversely which must be of adequate strength and integrally welded together. Explain the longitudinal framing system and transverse framing system.
(8 marks)

SECTION B (Total: 60 marks)**INSTRUCTION: Answer only THREE questions.****Please use the answer booklet provided.****Question 3**

- (a) The physical properties of components used in manufacturing must be considered in order to select the correct materials. Determine six considerations in order to select the correct materials.
(6 marks)
- (b) Shipbuilding is the construction of ships, which takes place in a specialized facility known as a shipyard. There are several things that need to be taken into consideration for build a shipyard. Identify three basic requirements of a modern shipyard.
(6 marks)
- (c) Marine resins are water resistant with high strength. A catalyst or hardener is added to the resin to begin the curing action. Explain four stages of condition when hardener is added to the resin.
(8 marks)

Question 4

- (a) The aim of lean production is to finding better, in more efficient ways of accomplishing the same tasks. Break down three stages of the lean production process.
(6 marks)
- (b) In ship construction, metal components of various sizes and shapes are used. These shapes are manufactured by the material forming processes. Determine three types of material forming processes only.
(6 marks)
- (c) Forklifts are used extensively to move heavy items. A forklift is easy to operate and manoeuvre. Discuss four characteristics for the selection of the forklift.
(8 marks)

Question 5

- (a) In an ideal manufacturing environment the material required for the manufacture of the ship or boat should be purchased and stored in the yard ready for use. Identify six reasons why it is not always practical to hold stores for anything other than immediate needs.
- (6 marks)
- (b) Purchasing is to acquire from outside sources the goods and services required by the shipyard, but not available within the organisation, at the lowest total cost, considering quantity, quality, time and price. Determine the responsibilities of purchasing department.
- (6 marks)
- (c) Building berth is a structure that is located on the shore of a sea, river or lake and that is equipped for shipbuilding. Building berth is the major component of a shipyard. Explain four requirements needed for inclined building berth.
- (8 marks)

Question 6

- (a) A floating drydock is a type of pontoon for dry docking ships and most large vessels are docked once every three years. With the aid of a diagram determine the basic arrangement, operation and the advantages of a floating dock.
- (8 marks)
- (b) The aim of materials and plant materials management is to co-ordinate, within shipyard, all activities connected with the flow of materials to the facility and on to the individual project in order to achieve efficient controls at optimum cost- in line with the ship building strategy. The scope and objective of purchasing, stock control and stores management within an organization must be taken into consideration such as the critical areas of purchasing. Identify six critical areas of purchasing.
- (12 marks)

END OF EXAMINATION PAPER