



UNIVERSITI KUALA LUMPUR
MALAYSIAN INSTITUTE OF MARINE ENGINEERING TECHNOLOGY

FINAL EXAMINATION
JANUARY 2016 SEMESTER

COURSE CODE : LGB 11503
COURSE NAME : SHIP TECHNOLOGY
PROGRAMME NAME : BACHELOR OF MARITIME OPERATION (HONS.)
DATE : 30 MAY 2016
TIME : 08.00 AM – 10.30 AM
DURATION : 2.5 HOURS

INSTRUCTIONS TO CANDIDATES

1. Please CAREFULLY read the instructions given in the question paper.
2. This question paper has information printed on both sides of the paper.
3. This question paper consists of TWO (2) sections; Section A and Section B.
4. Answer ALL questions in Section A. For Section B, answer THREE (3) questions only.
5. Please write your answers on the answer booklet provided.
6. Answer all questions in English language ONLY.

THERE ARE 5 PAGES OF QUESTIONS, INCLUDING THIS PAGE.

SECTION A (Total: 40 marks)

INSTRUCTION: Answer ALL questions.

Please use the answer booklet provided.

Question 1

- (a) The geophysical surveying can be divided into three methods. Define the differences between seismic reflection and seismic refraction?
(4 Marks)
- (b) An iceberg is a large piece of freshwater ice that has broken off a glacier or an ice shelf and is floating freely in open water. Identify four (4) effects of an iceberg on maritime activities?
(4 Marks)
- (c) The physiography and bathymetry of the ocean floor allow the sea bed to be described into Continental Margins, Deep Ocean Basins and Mid Oceanic Ridges. Describe three (3) distinct provinces of the ocean floor?
(6 Marks)
- (d) In a marine environment, the main factor that influences corrosion is the environment itself and there are several causes of corrosion in the marine environment. Briefly describe three (3) causes of corrosion in marine environment?
(6 Marks)

Question 2

- (a) Marine vessel is a floating vehicle that can carry goods, cargo, passenger etc from one place to another place or from one port to another port with safety condition. The bulk carrier was originally designed as an ore carrier. Discuss the development of the bulk carrier.
(4 Marks)

- (b) A double bottom is a ship hull design and construction method where the bottom of the ship has two complete layers of watertight hull surface. With the aid of a diagram, briefly justify the double bottom.

(6 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 and is often known as the Framing. The ship plating is attached to the framing. With the aid of a diagram, explain longitudinal farming system and transverse framing system.

(10 Marks)

SECTION B (Total: 60 marks)

INSTRUCTION: Answer only THREE questions.

Please use the answer booklet provided.

Question 3

- (a) The aim of lean is to finding better, in more efficient ways of accomplishing the same tasks. Identify four (4) methods of identifying the waste?

(4 Marks)

- (b) The initial design consists of the concept, preliminary and contract design. Identify three (3) preparation of the design in early stages.

(6 Marks)

- (c) The shipbuilding strategy depends on the facilities, plan layout, carnage, CAD facilities and the various processes available. Decisions are made on which components will be built first and the assembly order. Determine the factors affecting these decisions?

(10 Marks)

Question 4

- (a) Launching means 'to set a ship afloat for the first time'. When the vessel is nearly complete, it has to be transferred to the water. This can be done by using dry dock methods. Define the dry docking methods.

(4 Marks)

- (b) There are four (4) requirements must be taken into consideration for ensure that a ship launches successfully for inclined building berth. Explain the requirements needed for this type of launching.

(8 Marks)

- (c) In ship construction, metal components of various sizes and shapes are used. These shapes are manufactured by the material forming processes. Identify four (4) methods in material forming processes?

(8 Marks)

Question 5

- (a) Metals may be classified as ferrous or non - ferrous. A ferrous metal contains iron as its main element. A non - ferrous metal contains no iron or less iron than the other elements. Determine three (3) common ferrous metals used in the construction of ships.

(6 Marks)

- (b) Glass Reinforced Plastic (GRP) and Fibre Reinforced Plastic (FRP) is widely used in the construction of boat hulls as well as fittings. Justify three (3) processes can be used for fiberglass boat construction.

(6 Marks)

- (c) Suppliers have their own specifications for their standard products. Suppliers' specification may also include certification of the product, such as compliance with various government quality regulations such as SIRIM. In certain cases the supplier will certify that the product meets the requirement set by the relevant Standards Organisation such as Malaysian Standard (MS). In a shipyard, structural materials may need to comply with the Rules of the Classification Societies. These may be listed in their brochures and product manual. Choose eight (8) of suppliers' specification.

(8 Marks)

Question 6

- (a) 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. Explain six (6) critical areas of purchasing.

(6 Marks)

- (b) The design department issues the drawings and associated bills of materials relating to the construction of the ship. These drawings and materials lists (BOM, TPS) are then transmitted to the planning and control department, which issues a material requisition to the procurement department. The procurement department creates a procurement schedule. List six (6) of the relationship between the design and procurement departments.

(6 Marks)

- (c) A typical shipyard includes wide-ranging material handling equipment to transport a wide variety of materials ranging from large metallic objects to gas cylinders. Material handling equipment can be classified into four broad groups. Summarise four (4) material handling equipment groups?

(8 Marks)

END OF EXAMINATION PAPER

