

UNIVERSITI KUALA LUMPUR
Malaysian Institute of Marine Engineering Technology

FINAL EXAMINATION
JANUARY 2016 SESSION

SUBJECT CODE : LOB 40103
SUBJECT TITLE : INTEGRATED MARINE POLLUTION CONTROL
LEVEL : DEGREE
TIME / DURATION : 9.00 AM-12.00 PM (3 HOURS)
DATE : 20 MAY 2016

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper **CAREFULLY**.
 2. This question paper is printed on both sides of the paper.
 3. Please write your answers on the answer booklet provided.
 4. Answer should be written in **blue** or **black ink** except for sketching, graphic and illustration.
 5. Answer **FOUR (4)** questions **ONLY**.
 6. Answer all questions in **English**.
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THERE ARE 3 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

INSTRUCTION: Answer FOUR (4) questions ONLY.
Please use the answer booklet provided.

QUESTION 1

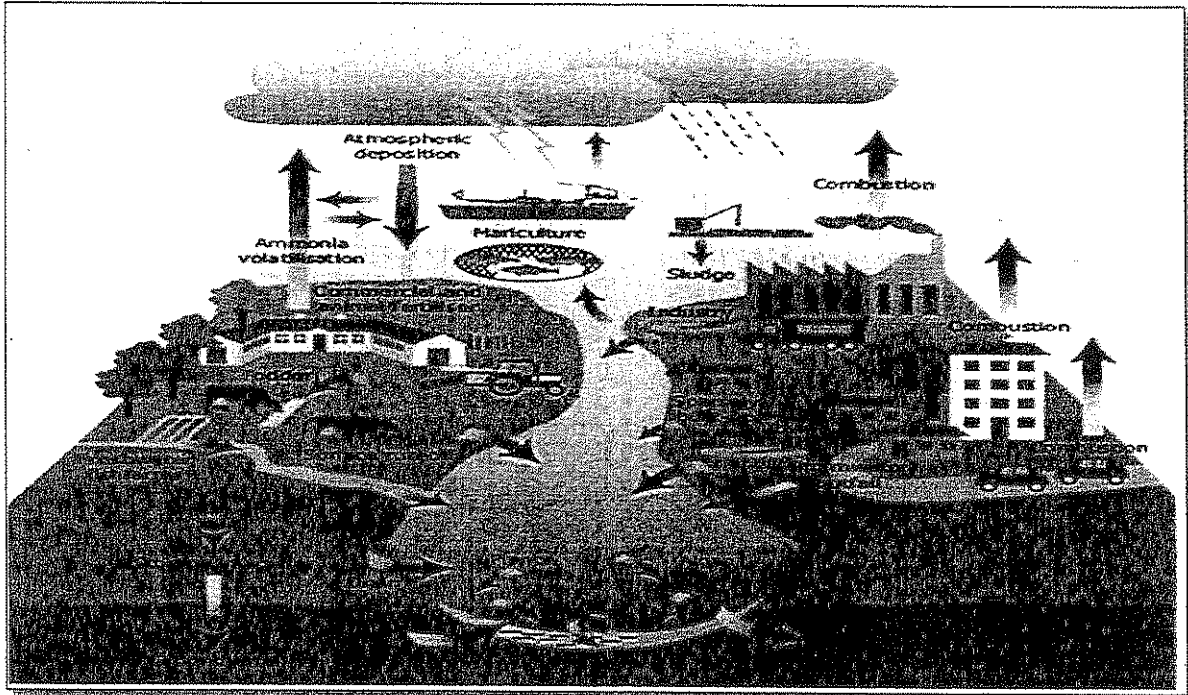


Figure 1: Sources of Marine Pollution

- a) Base on Figure 1 above, discuss in details the activities which contributes as the main sources of marine pollution. (10 marks)
- b) Define the following maritime terminologies:
- i. Pollutant (3 marks)
 - ii. Biodegradation (3 marks)
 - iii. Global warming (3 marks)
 - iv. Marine debris (3 marks)
 - v. Contamination (3 marks)

QUESTION 2

The Exxon Valdez, a two year old single hull oil tanker with capacity of 1.48 million barrels (62 million gallons) of oil, was the newest and largest of Exxon's 19-ship fleet. On evening of March 23, 1989 and with 1.26 million barrels of oil (54 million gallon) in cargo, the Exxon Valdez departed for Long Beach, California from Valdez, Alaska). As the Exxon Valdez approached Prince William Sound at 12 miles per hour, an effort was made to avoid chunks of ice from the nearby Columbia Glacier. The captain tried to turn into an empty inbound shipping channel where it struck underwater rocks in Prince William Sound, which tore huge holes in 8 of the vessel's 11 glans cargo holds, releasing more than 11 million gallons of oil within 5 hours. After 7 hours the resulting oil slick was 1000 ft. wide and 4 miles long.

- a) Discuss the cleanup method used to clean the oil spill from Exxon Valdez ship.(6 marks)
- b) Justify the ecological impact on the affected area as a result from this case. (10 marks)
- c) Examine the oil spill respond under Tier 1, Tier 2 & Tier 3. (9 marks)

QUESTION 3

- a) Discuss TWO (2) International Conventions under International Maritime Organization which focus on the elements to avoid pollution especially from ships. (10 marks)
- b) Discuss FIVE (5) common techniques used to control oil pollution and analyses which are the best techniques to stop the spills from spreading to a large area. (15 marks)

QUESTION 4

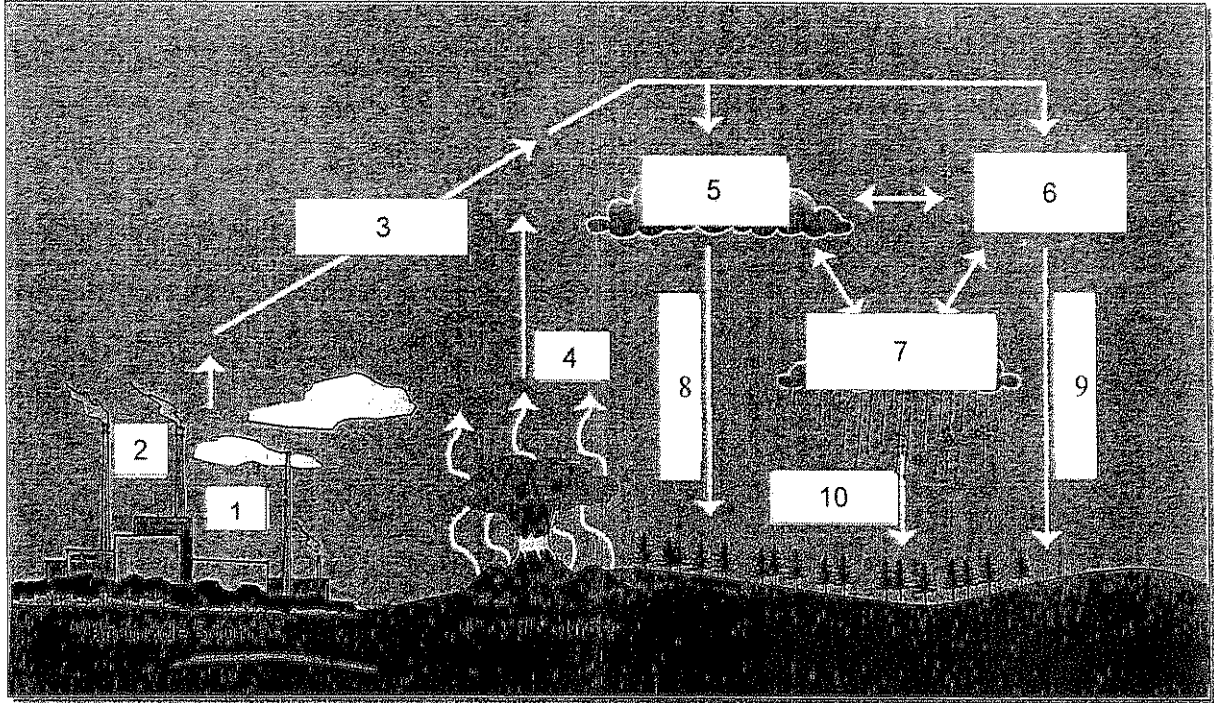


Figure 2: Acid Rain Process

- a) As shown in Figure 2 above, identify each of the element contributes in the process of Acid Rain. (10marks)
- b) Analyze the effects of Acid rain to human, animals and environment. (15 marks)

QUESTION 5

- a) Develop an Oil Spill Contingency Plan complete with the main content as required by International Maritime Organization (IMO). (15 marks)
- b) From your point of view, suggest FOUR (4) reasons why everyone should take care of the environment. (10 marks)

END OF QUESTION

