



**UNIVERSITI KUALA LUMPUR
MALAYSIAN INSTITUTE OF INDUSTRIAL TECHNOLOGY**

**FINAL EXAMINATION
JANUARY 2016 SEMESTER**

COURSE CODE	:	JFB 10103
COURSE TITLE	:	INTRODUCTION TO FACILITIES MAINTENANCE ENGINEERING
PROGRAMME LEVEL	:	BACHELOR
DATE	:	30 MAY 2016
TIME	:	2.30 – 5.30 PM
DURATION	:	3 HOURS

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. This question paper consists of **ONE** section.
 4. Answer **FOUR (4)** questions only.
 5. Please write your answers on the answer booklet provided.
 6. Please answer all questions in English only.
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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

Within industry, piping is a system of pipes used to transport fluids (liquids and gases) from one location to another.

- (a) Describe **FIVE (5)** types of fitting used in piping system. (5 marks)
- (b) With aid of diagram, describe **FOUR (4)** types of welding applied on ordinary steel pipe. (8 marks)
- (c) With aid of diagram, discuss **SIX (6)** types of welding defect on the steel piping. (12marks)

Question 2

Facilities Maintenance Engineering (FaME) is considered as the backbone of any organization, whether it is a manufacturing or service company. Reliable facilities equipment is considered as the main elements towards supporting the initiatives / program in organization such as Total Quality Management, Lean Manufacturing, Just-in-Time, Six-Sigma and etc.

- (a) Justify the above statement by providing **FOUR (4)** points on the importance of FaME in supporting the initiatives in organization. (10 marks)
- (b) Summarize **FIVE (5)** benefits gain from the systematic facilities maintenance in either manufacturing or service industry. (10 marks)
- (c) Discuss **TWO (2)** types of approaches in maintenance management. (5 marks)

Question 3

Computerized Maintenance Management System (CMMS) is a software that is used to schedule and record operation and preventive/planned maintenance activities associated with facility equipment.

- (a) Discuss **FIVE (5)** maintenance tasks which can be organized using CMMS.
(10 marks)
- (b) Despite having positive features in assisting the maintenance operation, the CMMS has the disadvantages against the conventional techniques in managing the maintenance data. Elaborate **FIVE (5)** possible disadvantages of using CMMS.
(10 marks)
- (c) Summarize **FIVE (5)** reasons of the need for computerization in managing the tasks.
(5 marks)

Question 4

Facility Maintenance Engineering (FaME) is an interdisciplinary field devoted to the coordination of space, infrastructure, people and organization.

- (a) Based on your understanding, describe the meaning of "Facilities "and "Maintenance".
(3 marks)
- (b) With the aid of diagram, discuss **FIVE (5)** scopes of Facilities Maintenance Engineering.
(12 marks)
- (c) Discuss **FOUR (4)** consequences of facilities failure by using the iceberg theory.
(10 marks)

Question 5

Welding is an absolutely essential component of industries such as the automotive industry, the construction industry and even the aviation industry. In fact, even oil rigs out at sea make use of various forms of welding in order to withstand the harsh oceanic weather conditions.

- (a) Compare the differences between welding, brazing and soldering
(10 marks)
- (b) Create the possible daily maintenance checklist for welding equipment.
(15 marks)

END OF EXAMINATION PAPER