



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

**FINAL EXAMINATION
JANUARY 2016 SEMESTER**

COURSE CODE : JFB 20102
COURSE TITLE : OVERHEAD MATERIAL HANDLING EQUIPMENT
PROGRAMME LEVEL : BACHELOR
DATE : 31 MAY 2016
TIME : 9.00 AM – 12.00 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 (1) 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

(a) Material handling equipment can be categorized into the following:

- Static
- Fixed
- Vehicle

Explain their differences and provide **TWO (2)** examples for each group.

(9 marks)

(b) One of the importance scope as a material handler is to handle storage of the material. Recommend **THREE (3)** safety guidelines in storing a material.

(6 marks)

(c) Certain fundamental principles for analyzing and designing solutions to material handling problems have been developed over a period of time based on experience of many material handling experts. This is to ensure effective and efficient handling of materials in general. Summarize **FIVE (5)** principles of material handling.

(10 marks)

Question 2

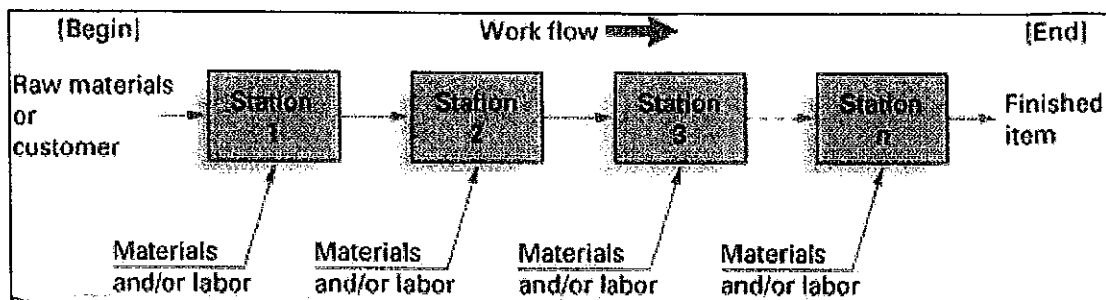


Figure 1: Plant layout

(a) Figure 1 illustrates one type of plant layout. This type of plant layout is useful when the production process is organized in a continuous or repetitive way. Summarize **FIVE (5)** advantages and disadvantages of this type of layout.

(10 marks)

(b) Safety guards are required to prevent accidents and protect the operators. Define the following:

- i. Fixed guard
- ii. Interlocking guard
- iii. Automatic guard

(6 marks)

(c) Conveyor belt maintenance not only includes proper care of the belt itself but also includes care and maintenance of the frame and accessories. Develop a complete belt conveyor inspection checklist form that can be used as a guide for general conveyor systems.

(9 marks)

Question 3

Cranes are dangerous equipment that can cause enormous disasters when they got deflections or lack of maintenance. It is commonly used in the construction and port areas.

(a) Identify **NINE (9)** hazards involving cranes.

(9 marks)

(b) Analyze **FOUR (4)** major factors to crane accidents and provide examples for each factor.

(8 marks)

(c) Explain **FOUR (4)** safety tips when operating or working near the cranes.

(8 marks)

Question 4

(a) Industrial vehicles/trucks in one of the most common group of materials handling equipment used in industry as well as in day to day distribution of goods in warehouse and large stores.

- i. Identify **FIVE (5)** general features of forklift as an option for material handling equipment.

(5 marks)

- ii. Investigate **FIVE (5)** guidelines to operate a forklift safely.

(10 marks)

- (b) Elevator is one of the welcoming elements in a high rise building or tower. As a guest at one of the high rating hotel, create your judgment on the ideal performance criteria of an elevator.

(10 marks)

Question 5

- (a) Preventive maintenance is a set of activities that are performed on plant equipment and systems before the occurrence of a failure.

- i. Describe **THREE (3)** factors that affect the efficiency of this type of maintenance.

(6 marks)

- ii. Preventive maintenance can also be subdivided into different kinds based on the nature of the activities includes:

- Routine maintenance
- Running maintenance
- Opportunity maintenance.

Discuss all types of maintenance.

(9 marks)

- (b) Records are the evidence of what an organization does. They capture the business activities and transactions, correspondence and personnel files. Explain **FIVE (5)** benefits of keeping maintenance record.

(10 marks)

END OF EXAMINATION PAPER