

POLITEKNIK
Jabatan Pengajian Politeknik

EXAMINATION AND EVALUATION DIVISION
DEPARTMENT OF POLYTECHNIC EDUCATION
(MINISTRY OF HIGHER EDUCATION)

MECHANICAL ENGINEERING DEPARTMENT

FINAL EXAMINATION
DECEMBER 2011 SESSION

J4284: PACKAGING LINE OPERATION

DATE : 26 APRIL 2012 (THURSDAY)
DURATION : 2 HOURS (02:30 PM – 04:30 PM)

This paper consists of **THREE (3)** pages including the front page.
Essay (6 questions – answer 4 questions)

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THE CHIEF INVIGILATOR

QUESTION 1

- a) State activities involve in packaging line (8 marks)
- b) State the criteria of container and the material used in packaging process (5 marks)
- c) State definations :
i. Machine efficient
ii. Line organization
iii) Line Balancing (9 marks)
- d) Describe defination Packaging line. (3 marks)

QUESTION 2

- a) Describe **THREE (3)** types of conveyer which commonly used in industry. (12 marks)
- b) Describe of processes in Extrusion. (9 marks)
- c) State **FOUR (4)** components in Air Conveyer. (4 marks)

QUESTION 3

- a) State **FOUR (4)** criteria of dry products. (4 marks)
- b) State **TWO (2)** categories of liquid products. State **THREE (3)** main techniques used in liquid product filling. (5 marks)
- c) State **TWO (2)** advantages and **TWO (2)** disadvantages of Pure Vacuum Filling technique compared to Gravity Vacuum Filling technique. (6 marks)
- d) Describe Level Sensing Filling process. State **THREE (3)** products using this technique for packaging process. (10 Marks)

QUESTION 4

- a) Closure is one of the important process in packaging. State **FOUR (4)** types of closure using in the process. Give example of end product for each type of closure. (6 marks)
- b) State **THREE (3)** differences in Press-on Capping and Roll-on Capping process.

- (6 marks)
- c) State **TWO (2)** labeling function in packaging. There are four types of label in industry, explain **TWO (2)** of the four labels. (8 marks)
- d) Describe assembly process sleeve label technique semi automatic. (5 marks)

QUESTION 5

- a) State **FIVE(5)** maintenance function. (5 marks)
- b) State relevant between maintenance costs with tool at the in industry. (6 marks)
- c) State about maintenance organization. State person in charge avoid organization maintenance.
 i. Daily
 ii. Weekly
 iii. Monthly
 iii. Yearly (6 marks)
- d) State one example schedule maintenance avoid for label machine. (8 marks)

QUESTION 6

- a) State **FIVE (5)** current costs in packaging process. (5 marks)
- b) Describe with Planning Plant. State **(THREE) (3)** if happen requirement Plant Planning not following. (5 marks)
- c) State **FIVE (5)** important for vendor chosen. (5 marks)
- d) Printing Company wants to buy new a printing machine from type Offset. List one complete specification for requirement printing process company for easier buying process from vendor. (10 marks)