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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2018/2019**

COURSE NAME : ENGINEERING MANAGEMENT
COURSE CODE : BNR 35203
PROGRAMME CODE : BND / BNE / BNF
EXAMINATION DATE : JUNE / JULY 2019
DURATION : 2 HOURS AND 30 MINUTES
INSTRUCTION : ANSWERS **FIVE (5)** QUESTIONS
ONLY

THIS QUESTION PAPER CONSISTS OF **SEVEN (7)** PAGES

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- Q1** (a) Briefly outline the advantages of an engineer play a role in management department. (5 marks)
- (b) There are three levels of management. List and explain all **THREE (3)** levels. (9 marks)
- (c) Zuhaili, an engineering technologist with 8 years experienced was appointed as a manager in manufacturing company. What are the three main skills that company look into Zuhaili as manager? (6 marks)
- Q2** (a) Using **Table Q2(a)(i)** and **Table Q2(a)(ii)**, calculate
- (i) Current ratio
 - (ii) Acid test ratio
 - (iii) Inventory turnover
 - (iv) Accounts receivable turnover
 - (v) Asset turnover
 - (vi) Profit margin
 - (vii) Return on total assets
- (14 marks)
- (b) State the difference of mission, vision and objective of a company. (6 marks)
- Q3** (a) Define the meaning of Total Quality Management. (2 marks)
- (b) Assume that you are a quality department manager for a company. You are required to implement quality management and continuous improvement process in a production line. One of the elements for continuous improvement is PDCA. Discuss the processes involved in PDCA cycle by drawing suitable diagram. (4 marks)
- (c) Differentiate between the continuous improvement and traditional approach of total quality management. (6 marks)
- (d) Compare types of costs that involved in quality costs. (8 marks)

- Q4** (a) Define the meaning of project. (3 marks)
- (b) James is a project manager for construction company. He needs to plan and build a factory for bicycle manufacturing company. Develop and breakdown suitable plan for James to start his project. (6 marks)
- (c) A project consists of eleven activities, A to K. The duration (in days), and the activities preceding each of them show in **Table Q4 (c)**.
- (i) Construct an activity network diagram for the project. The early start, late start, early finish and late finish for each activity must be stated.
- (ii) Find the critical path in this activity network.
- (iii) Calculate the duration of completion time of the project. (11 marks)
- Q5** (a) Explain the advantages of the Material Requirement Planning (MRP). (3 marks)
- (b) Managing technology through the product life cycle consists of four life cycles. Explain briefly the **FOUR (4)** products or services of life cycles. (6 marks)
- (c) The production planning is required to ensure that the production may run according to the original schedule and carried out in a best possible way and at the lowest cost. Discuss the steps that are involved in production planning. (8 marks)
- (d) Discuss the purpose of managing the inventory and provide two risk that related to inventory. (3 marks)
- Q6** (a) Define the budget estimation. (2 marks)
- (b) Discuss in detail the **SIX (6)** types of budget estimation. (6 marks)
- (c) Explain the differences between cost and pricing. (6 marks)
- (d) Differentiate between the sales orientation and marketing orientation. (6 marks)

- Q7** (a) State the purposes of performing maintenance. (4 marks)
- (b) Differentiate the predictive maintenance and preventive maintenance. Explain with examples. (4 marks)
- (c) Identify the differences between breakdown maintenance and scheduled maintenance. (6 marks)
- (d) In order to monitor occupational safety and health issues, risk assessment is very important. One of tools for risk assessment is HIRARC. Discuss steps to be done in HIRARC. (6 marks)

- **END OF QUESTIONS** -

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Table Q2(a)(i)

Balance Sheet, Sterling Chemical, Inc., December 31, 2001

	Asset	
Current assets		
Cash	\$150,724	
Securities (at cost)	<u>\$99,866</u>	\$250,590
Account receivable		\$416,304
Inventories (at lowest of cost or market)		
Raw materials and supplies	\$208,046	
Work in progress	\$182,702	
Finished goods	<u>\$289,610</u>	\$680,358
Prepaid expenses		<u>\$29,498</u>
Total current assets		\$1,376,750
Property, plant and equipment	\$4,461,150	
Less accumulated depreciation and depletion	\$2,402,024	
Net property, plant, and equipment		<u>\$2,059,126</u>
Total Assets		<u>\$3,435,876</u>
	Liabilities and Stockholders' Equity	
Current liabilities		
Account payable	\$105,056	
Installments due within one year on debt	\$26,836	
Federal income and other taxes	\$239,194	
Other accrued liabilities	<u>\$120,768</u>	
Total current liabilities		\$491,854
Long-term debt		<u>\$968,664</u>
Total Liabilities		\$1,460,518
Stockholders' equity		
Capital stock	\$505,130	
Retained earnings	<u>\$1,470,228</u>	<u>\$1,975,358</u>
Total liabilities and equity		<u>\$3,435,876</u>

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Table Q2(a)(ii)

Statement of Income and Retained Earnings, Sterling Chemicals. Inc, Year Ended December 31, 2001

Gross sales	\$3,246,386	
Less returns and allowances	\$150,050	
Net sales		\$3,096,336
Less expenses and costs of good sold		\$416,304
Cost of goods sold	\$2,002,376	
Depreciation and depletion	\$258,502	
Selling expenses	\$104,500	
General and administrative expenses	\$180,076	\$2,545,454
Operating profit		\$550,882
Plus interest and other income		\$59,840
Gross income		\$610,362
Less interest expense		\$33,260
Income before taxes		\$577,102
Provision for income taxes		\$261,142
Net income		\$315,960
Retained earning January 1, 2001		\$1,370,988
		\$1,686,948
Dividends paid		\$216,720
Retained earnings December 31, 2001		\$1,470,228

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Table Q4(c)

Preceding Activities	Activities	Duration (Days)
C, F, J	A	7
E	B	6
-	C	9
B, H	D	7
C, J	E	3
-	F	8
A, I	G	4
J	H	9
E, F	I	9
-	J	7
B, H, I	K	5