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Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2019/2020**

COURSE NAME : QUALITY MANAGEMENT
COURSE CODE : BPB 44002
PROGRAMME CODE : BPB
EXAMINATION DATE : DECEMBER 2019 / JANUARY 2020
DURATION : 2 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

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THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

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- Q1** (a) Categorise Kaizen activities based on PDCA cycle. (10 marks)
- (b) Mr. Saffin as quality manager has analysed production data based on rejected units in final production line. He want to set-up an improvement project to solve the problem as presented in **Table Q1**.

Table Q1: Problem of rejected unit

No	Causes	Quantity
1	Workmiss amongst employees	49
2	Machine breakdown	32
3	Plastic part bending	4
4	Panel fail	3
5	Workplace unorganised	3
6	SOP problem	3
7	Workplace problem	2
8	Improper schedule for 5S	2
9	Lack of awareness	1
10	Lack of co-operation	1

- (i) Analyse the causes using Ishikawa Diagram from **Table Q1**. (4 marks)
- (ii) Analyse the root cause of machine breakdown based on Five Why Analysis. (5 marks)
- (iii) Propose **THREE (3)** solutions for improvement based on two main causes as stated in **Table Q1** using Tree Diagram. (6 marks)

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- Q2**
- (a) Explain **THREE (3)** categories of variation in production process. (6 marks)
 - (b) Compare **THREE (3)** differences between stable process and unstable process. (6 marks)
 - (c) Differentiate between Type I error and Type II error in sampling. (4 marks)
 - (d) The weight a packet of sugar is specified between 0.95 and 1.05 kg. 200 sample have been measured with resulting mean of 1.02 kg and standard deviation of 0.02.

Calculate the followings:

- (i) C_{pu} (3 marks)
- (ii) C_{pl} (3 marks)
- (iii) C_{pk} (3 marks)

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- Q3** (a) (i) List **FIVE (5)** aims of ISO 9001:2000. (5 marks)
- (ii) Discuss **FOUR (4)** main sections in Quality Management System: ISO 9001. (8 marks)
- (b) AKB company faces competition from global market. The company's operating cost and prices of its products were high and its products were of relatively inferior quality in comparison to its competitors. As a result of this, return on assets fell to less than 10% and marketshare came down sharply from 86% in 2014 to just 20% in 2018. Between 2014 and 2018, ABC's profits decreased from \$ 3.15 billion to \$ 190 million. The company discovered that the average manufacturing cost in Japanese companies was 40-50% of AKB. As a result, Japanese companies were able to undercut AKB's prices effortlessly. AKB quickly began emphasizing reduction of manufacturing costs and gave new thrust to quality control through implementing the benchmarking program.
- Discuss **SIX (6)** steps for implementing benchmarking in improving AKB company. (12 marks)
- Q4** (a) AKR Sdn. Bhd. has decided to improve their business performance through Six Sigma approach. Their current quality level of the company is 20,054 ppm.
- (i) Calculate value in percentage for 20,054 ppm. (3 marks)
- (ii) State **FOUR (4)** key players of Six Sigma. (4 marks)
- (iii) Explain Taguchi Method in Six Sigma. (3 marks)
- (b) Outline **FIVE (5)** DMAIC process in improving variation in the process. (15 marks)

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-END OF QUESTIONS-