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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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

COURSE NAME : QUALITY MANAGEMENT
COURSE CODE : BPB 44002
PROGRAMME CODE : BPB
EXAMINATION DATE : DECEMBER 2018 / JANUARY 2019
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) Describe Plan, Do, Check and Action (PDCA) using general process map. (10 marks)

(b) Fatah as production manager has reviewed production data for further investigation based on rejected units in final production line. He want to set-up an improvement project to solve the problem. You as quality control executive have been appointed by Fatah to lead the project. Data has been collected to identify the actual causes as presented in **Table Q1(b)**.

Table Q1(b): Problem of rejected unit

No	Problem	Quantity
1	Workmiss amongst employees	49
2	Missing accessories	32
3	Capacitor damage	4
4	Panel bending	3
5	Scratching	3
6	SOP problem	3
7	Plastic deform	2
8	Adjustment	2
9	Cabinet color problem	1
10	Button not function	1

- (i) Draw Pareto chart based on data from **Table Q1(b)**. (4 marks)
- (ii) Determine the root cause of workmiss based on five why analysis. (5 marks)
- (iii) Propose **THREE (3)** solutions for improvement based on two main causes as stated in **Table Q1(b)** using Tree Diagram. (6 marks)

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- Q2**
- (a) Explain **THREE (3)** sources of variation in production process. (6 marks)
 - (b) Compare **THREE (3)** differences between stable process and unstable process. (6 marks)
 - (c) Differentiate between the terms between defect and defective unit. (4 marks)
 - (d) The thickness of part K is specified between 4.95 and 5.05 mm. 200 sample have been measured with resulting mean of 5.03 mm 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) Illustrate quality management system model based on ISO 9001:2000. (5 marks)
- (ii) Discuss **FOUR (4)** main sections in Quality Management System: ISO 9001. (8 marks)
- (b) ABC company found itself increasingly vulnerable to intense competition from America and Japanese competitors. According to analysts, ABC's management failed to give the company strategic direction. It ignored other companies such as Ricoh, Canon, and Sevin who were consolidating their positions in the lower-end market and in niche segments. 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 8% and marketshare came down sharply from 86% in 2014 to just 17% in 2018. Between 2014 and 2018, ABC's profits decreased from \$ 2.15 billion to \$ 290 million. Discuss **SIX (6)** steps for implementing benchmarking in improving ABC company. (12 marks)
- Q4** (a) QMP Sdn. Bhd. has decided to improve their business performance through Six Sigma approach. Their current quality level of the company is 27,054 ppm.
- (i) Calculate value in percentage for 27,054 ppm. (3 marks)
- (ii) State **FOUR (4)** benefits of Six Sigma. (4 marks)
- (iii) Explain **ONE (1)** function of Taguchi Method in Six Sigma. (3 marks)
- (b) Discuss **FIVE (5)** DMAIC process in improving variation in the process. (15 marks)

-END OF QUESTIONS-

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