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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2014/2015**

COURSE NAME : QUALITY MANAGEMENT
COURSE CODE : BPB 44002
PROGRAMME : 2 BPB
EXAMINATION DATE : DECEMBER 2014/JANUARY 2015
DURATION : 2 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

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- Q1**
- (a) Define the concept of chain of customers. (3 marks)
 - (b) State **SEVEN (7)** steps for supplier development. (7 marks)
 - (c) Discuss **FIVE (5)** approaches of supplier partnering. (15 marks)
- Q2**
- (a) Define Stable Process. (3 marks)
 - (b) Explain:
 - (i) **THREE (3)** type of sampling for samples. (6 marks)
 - (ii) Type I and Type II Errors. (4 marks)
 - (c) Discuss **SIX (6)** steps in developing control charts. (12 marks)

Q3 (a) Explain SEVEN (7) basic Quality Control (QC) tools.

(7 marks)

(b) (i) Describe the purpose of Pareto Charts.

Table Q3(b)

Part Name	Defect qty	Accumulated Qty	Accumulated %
Part A	20		
Part B	15		
Part C	5		
Part D	3		
Part E	3		
Part F	2		
Part G	2		
Total			

(ii) Calculate accumulated defect quantity and accumulated defect percentage as in Table Q3(b).

(4 marks)

(iii) Draw Pareto Chart for Table Q3(b).

(4 marks)

Table Q3(c)

Decision Criteria	Importance
Cost	0.2
Easy to implement	0.3
Benefit	0.5

Final Rankings	
Decision Criteria	Importance
Cost)	
Improvement A	1
Improvement B	2
Improvement C	3
Improvement D	4

Decision Criteria	Importance
(Easy to implement)	
Improvement A	3
Improvement B	2
Improvement C	4
Improvement D	1

Decision Criteria	Importance
(Benefit)	
Improvement A	4
Improvement B	2
Improvement C	1
Improvement D	3

- (c) ABC company had to select an improvement between four improvements based on three selection criteria as shown in **Table Q3(c)**. Rank 1 is the most important and rank 4 is the least important.
- (i) Calculate the score of each improvement based on decision criteria and final rankings. (8 markah)
- (ii) Determine which improvement is the best option. (2 markah)

- Q4**
- (a) Explain **THREE (3)** categories of variance in the production process. (6 marks)
- (b) Distinguish between random variation and non random variation. (4 marks)
- (c) A quality inspector check the length value of a part from samples and record the value in cm: $X_1=32.0$, $X_2=29.0$, $X_3=29.0$, $X_4=31.0$ and $X_5=29.0$.
- Calculate:
- (i) Average. (2 marks)
- (ii) Median. (2 marks)
- (iii) Standard deviation. (2 marks)
- (d) The thickness of a component is specified between 40 and 50 millimeters. Thirty components were sampled with resulting mean of 44 millimeters and standard deviation of 3.5.
- Calculate:
- (i) Cpu. (3 marks)
- (ii) Cpl. (3 marks)
- (iii) Cpk. (3 marks)

-END OF QUESTION-