

PRINCE OF SONGKLA UNIVERSITY
FACULTY OF ENGINEERING

Final Examination : Semester II**Academic Year** : 2007**Date** : February 21st,2008.**Time** : R300**Subject** : 225-348 Quality Control**Room** : 09:00-12:00 am.

ทฤษฎีในการสอบ โทษชั้นต่ำปรับตกในรายวิชานั้น
และพักการเรียน 1 ภาคการศึกษา

Instructions :

1. There are 5 questions; 100 points.
2. Attempt all questions.
3. Books, notes, dictionary, and calculator are allowed.
4. Borrowing things from other students is prohibited.

Problem	Full Score	Score
1	15	
2	10	
3	15	
4	10	
5	50	
Total	100	

Assoc. Prof. Dr. Sunchai Klinpiku

Instructors



1. A textile manufacturer decided to establish a control chart for defects in blanket produced. From a sampling inspection of 100 pieces of blanket, 850 defects were found.

Establish a control chart which has a probability of 94% of defects falls within the control limit.

(15 points)



2. Use $AQL = 1.0\%$ $\alpha = 0.05$ $LTPD = 7.5\%$ and $\beta = 0.10$

(a) Design a single sampling plan. (5 points)

(b) Using this sampling plan in (a), normal inspection, general level, what is the maximum lot size?

(5 points)

3. An electronic manufacturer buys memory devices from the vendor which has a long record of good quality performance. The QC department has an inspection plan to test the life of devices with a specified testing period of 600 hours with replacement. The manufacturer agrees to accept the devices having an average life time of 3,000 hours with a probability of acceptance of 95 % and decides to reject the devices having an average life time of 1,000 hours with a probability of rejection of 90 %.

Determine the inspection plan for the QC department.

(15 points)



4. A quality test plan of microchip devices of mobile phone at a failure rate of 2 % per 1,000 hours will be designed using $\alpha = 0.10$ and $C = 3$.

(a) What is the quality test plan of the devices? (5 points)

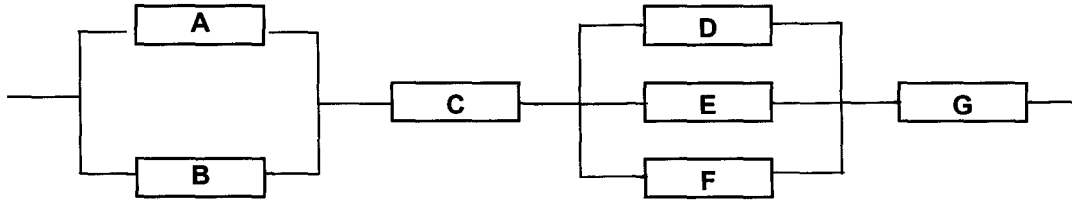
(b) Determine a quality test plan to maintain the quality level of the devices by selecting a period of 6 months with a confidence level of 10 %.

(5 points)



5. Answer the following questions : (50 points)

(1) What is the reliability of the following device? (5 points)



$$R_A = 0.75$$

$$R_C = 0.89$$

$$R_D = 0.92$$

$$R_G = 0.98$$

$$R_B = 0.93$$

$$R_E = 0.87$$

$$R_F = 0.95$$

(2) Explain briefly about an adversary subsystem.

(5 points)

(3) What is the theory or principle that the “red beads” game try to illustrate? Explain.

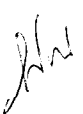
(5 points)

(4) Explain about all activities and steps in top-down management of TQM .

(10 points)



**(5) Explain procedure steps for evaluation using BSC and KPI.
(5 points)**



(6) List the procedure steps for safety management according to the safety law issued by the Ministry of Labor .

(5 points)



(7) Explain the reasons why the business process is important in the Quality Management System.

(5 points)

(8) List all major changes of ISO 9000:2000 in comparing with ISO 9000 : 1994.

(5 point:)

**(9) List the main criteria and scores of the Thailand Quality Award.
(5 points)**

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