

SECTION A – ANSWER ALL QUESTIONS

QUESTION 1

Process mapping, otherwise known as flow charting, is a method of visually clarifying complex operations. It can help standardise operations and identify areas for improvement.

- (a) Illustrate and explain **THREE** recognised process mapping symbols. (6 marks)
- (b) Construct a process map which illustrates the response and decision-making process of a manufacturer following a customer telephone call to report the failure of one of their products. For your example, use one of the following domestic products:
- (i) washing machine
 - (ii) electric shower
 - (iii) central heating boiler.

(14 marks)

QUESTION 2

Continuous improvement programmes aim to harness and direct the skills and knowledge of those most closely involved with the tasks to be improved. Integral to these programs is structured problem solving using a range of recognised tools.

Describe and illustrate **FIVE** problem solving tools that could be employed in a continuous improvement programme.

(20 marks)

QUESTION 3

Many ideas to address an issue or problem get overlooked without time being put aside to gather these potential solutions and then address them in a structured manner. Brainstorming is a recognised method of gathering ideas within a team or group.

You have been asked to run a brainstorm meeting; describe the process you would go through to do this and how you would most effectively use the output of the meeting.

(20 marks)

SECTION B – ANSWER TWO QUESTIONS ONLY

QUESTION 4

You have been asked to investigate the deterioration in product or service quality which is starting to impact on company profits. Using your organisation, or an example organisation of your choice:

- (a) Outline methods and graphical techniques you could use to identify and quantify the quality issues to senior management in a clear manner. (10 marks)
- (b) Using a cause and effect diagram, take an identified quality issue of your choice and explain and illustrate with examples how this diagram is used to identify potential root causes. (10 marks)

(10 marks)

QUESTION 5

A company has suffered from high-warranty issues with a recent product which, after review, they now wish to withdraw. However, they now wish to design their own successor to this product range using a new design team. You are the company quality manager supporting this design team.

- (a) What tools and techniques would you use to explain the issues to the design team and prioritise areas for improvement? (10 marks)

(10 marks)

- (b) Explain how you would lead the team in reducing risk with their new design. Illustrate and explain any tools you would employ in this activity. (10 marks)

(10 marks)

QUESTION 6

A company is producing the same high-volume product on three assembly lines and is striving to understand why an unacceptable proportion of their products are outside specification. You have been asked to investigate.

Write a report explaining and illustrating the methods and techniques you would use to examine the process and identify the root causes of the out-of-specification product. How would you instigate and assess corrective actions?

(20 marks)

QUESTION 7

In order to understand and improve a manufacturing process, or delivery of a service, capability studies are a recognised technique employed in many organisations.

(a) Explain in what situations it would be appropriate to carry out a process capability study.

(8 marks)

(b) Describe the key stages an organisation would go through in carrying out a capability study using graphical illustrations as appropriate.

(12 marks)



Chartered Quality Institute

CQI Examinations January 2012

Unit 305

Using Quality to improve Business Performance (Level 3)

26 January 2012

Time: 9.40 – 12.10
(2½ hours)

Notes for candidates

At 9.30, you have 10 minutes preparation time before the exam begins. Your exam booklet will be handed out at 9.40.

Attempt **ALL THREE questions** in **Section A**. Attempt **any TWO** questions from **Section B**. If you attempt three or more questions in Section B, only the first two will be marked.

Questions may be attempted in any order. All questions carry equal marks. The maximum marks for each part of each question are shown.

Begin each question at the top of a fresh side of paper. Do not write in the margins.

If you use any additional sheets (graph paper or additional answer booklet) please indicate your CQI student number, examination name and date on each sheet.