

## QUESTION 5

The DMAIC approach to quality improvement is an established methodology that can be highly effective given the correct team selection and leadership. Explain the stages of this approach and the tools used at each stage to support it.

(20 marks)

## QUESTION 6

Factors which determine the success of team-based quality improvement projects are complex and varied.

(a) Discuss the importance of the following factors in driving project success:

- 1) Data availability and quality
- 2) Management support
- 3) Team leadership
- 4) Team selection

(12 marks)

(b) Name and discuss **two** key factors that are important to successfully close out an improvement project.

(8 marks)

## QUESTION 7

You have recently been appointed as quality manager and the main new product range is suffering from poor customer satisfaction, leading to deterioration in sales. For the purpose of the question choose either washing machines or underfloor heating as your product.

(a) You are required to present a review to senior management on the issue(s). Discuss the typical key information you would require from the following teams:

- 1) The customer services helpdesk team
- 2) The design engineering team
- 3) The field service engineers
- 4) Third party distributors of your product (merchants)

(12 marks)

(b) Describe **two** possible actions for each of the following areas:

- 1) Improving the new product design
- 2) Managing the present stock of this product in the field

(8 marks)



Chartered Quality Institute

CQI Examinations June 2015

## Unit 305

### Using Quality to Improve Business Performance (Level 3)

24 June 2015

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 (i.e. graph paper or additional answer booklet) please write your CQI student number, examination name and date on each sheet.

## SECTION A – ANSWER ALL QUESTIONS

### QUESTION 1

Your company has experienced deterioration in product or service quality. You have been asked to arrange a root cause investigation project and choose to use a group brainstorming session for the first meeting.

- (a) Name and explain **two** graphical tools you will use to present the issues to the team at the start of the meeting. (4 marks)
- (b) Discuss **three** characteristics or skills in the team that are required to make the session effective. (6 marks)
- (c) Following definition of the issues, discuss step by step how the brainstorming exercise would be carried out. In your answer discuss **two** tools you would use to group and refine the output. (10 marks)

### QUESTION 2

Failure modes and effects analysis (FMEA) is an established technique which, when employed effectively, can reduce risk in the design of a product or delivery of a service.

- (a) Choose a product or service with which you are familiar and present **two** examples of potential failures on a headed and fully detailed FMEA template. (8 marks)
- (b) Discuss **two** quality tools which could be used to support an FMEA exercise explaining how they would complement meeting effectiveness. (6 marks)
- (c) Name and explain **two** key outputs of an FMEA exercise. (6 marks)

### QUESTION 3

A flow chart or process map is a document commonly used across many industries to graphically represent workflow.

- (a) Discuss how a flow chart can bring important benefits to a business in the following three areas, giving an example as appropriate to back up your reasoning: (9 marks)
- 1) Training of new staff
  - 2) Standardisation and QMS support
  - 3) Reduction of waste.
- (b) Using recognised symbols, complete a flow chart of a business process with which you are familiar and involves interaction between a number of departments or functions. (11 marks)

## SECTION B – ANSWER TWO QUESTIONS ONLY

### QUESTION 4

The seven basic tools of quality are commonly employed by teams or individuals to complement quality improvement processes.

- (a) Illustrate and explain the use of the following three tools in the context of quality improvement initiatives: (12 marks)
- 1) Cause and effect or Ishikawa diagrams
  - 2) Pareto charts
  - 3) Scatter diagrams.
- (b) Selecting a process of your choice explain, with appropriate illustrations, how a control chart could be used to monitor and maintain the intended process output. (8 marks)