

## QUESTION 5

A process mapping/flow charting exercise can be carried out to understand the flow of operations within a complex process. It is often initiated where the desired output of the process falls below the requirements in a key business target.

a) Illustrate and explain **three** process mapping symbols.

(6 marks)

b) Draw a process map using recognised symbols to show a typical sales process from receipt of an order through to delivery of a product or a service. Include appropriate “swim lanes” in your answer.

(10 marks)

c) Describe how process mapping can bring particular benefits to a business in the following three areas:

- 1) Training new staff
- 2) Support for quality management systems
- 3) Process improvements through reducing waste.

(9 marks)



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CQI Examinations June 2016

Unit 305

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

24 June 2016

Time: 9.40 – 12.10  
(2½ hours)

At 9:30, you will have 10 minutes preparation time before the exam begins.  
Your exam script will be handed out at 9:40.

#### Notes for candidates

Attempt **BOTH** questions in **Section A**.

Attempt **Any TWO** questions from **Section B**.

If you attempt all three 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.

## SECTION A – ANSWER ALL QUESTIONS

### QUESTION 1

Brainstorming is a recognised team technique, often used to explore the root causes of a quality issue. When used in conjunction with complementary tools, this technique can be highly effective in understanding these causes and prioritising corrective actions.

- a) Explain how you would run a brainstorming exercise to establish the root causes of an issue.  
(11 marks)
- b) Name **one** quality tool you would use in conjunction with the exercise described in part (a). Explain how the tool complements the brainstorming technique.  
(5 marks)
- c) Explain **three** key factors that could limit the effectiveness of any brainstorming exercise.  
(9 marks)

### QUESTION 2

Quality improvement teams are trained to use a number of quality tools at the appropriate stages of a PDCA based project. The Seven Basic Tools of Quality are the most commonly known grouping of these, however, other quality, planning and control tools are also valid.

- a) Explain the activities required at each stage of a PDCA based project. Within your answer name **two** tools you would employ at each stage and describe how they support that stage.  
(13 marks)
- b) Illustrate and label the following **three** basic tools of quality and discuss their practical use in each case.
- 1) Scatter diagrams
  - 2) Check sheets
  - 3) Pareto charts.
- (12 marks)

## SECTION B – ANSWER TWO QUESTIONS ONLY

### QUESTION 3

There is a constant drive to reduce introduction times for new products or services. This makes quality tools such as Failure Modes Effects Analysis (FMEA) even more important for effectively anticipating and preventing failures, which can increase cost of poor quality and damage company reputation.

- a) Describe, step-by-step, how you would carry out an FMEA exercise to understand and address product or service failure risks.  
(11 marks)
- b) Construct an FMEA chart/template illustrating **two** potential failure modes of your choice.  
(8 marks)
- c) Name and explain **two** factors that could make an FMEA exercise less effective.  
(6 marks)

### QUESTION 4

Given the correct support and training, quality improvement teams are able to impact business performance significantly and also put in effective measures to consolidate improvement 'gains'.

- a) Discuss the importance of the following factors for the success of any team based improvement project:
- 1) Definition and scope of team goals
  - 2) Team leadership
  - 3) Team membership and selection criteria
  - 4) Systems and culture for consolidating improvements.
- (16 marks)
- b) Discuss **three** reasons why senior management support is a key factor in the success of any quality improvement project.  
(9 marks)