

QUESTION 6

Brainstorming can be an effective tool for capturing the reasons for a particular quality issue and identifying potential solutions.

- 1) Discuss how you would select your team in order to ensure a successful brainstorming session.
(5 marks)
- 2) Describe how would you present and review the issue before the exercise.
(5 marks)
- 3) Discuss the key rules of brainstorming – do's and don'ts and how the exercise is run- the practicalities.
(10 marks)

QUESTION 7

An effective quality improvement project team requires resources, commitment and support throughout its full term and beyond in order to achieve its key aims.

- (a) Explain the role of senior management in the following three stages of this type of project:
 - 1) Project preparation and kick off
 - 2) Stage or gate reviews
 - 3) Closure and consolidation.(6 marks)
- (b) Team leadership in any improvement project is critical. Discuss **three** key characteristics or attributes of an effective improvement team leader.
(6 marks)
- (c) In some cases external, third party, support may be brought in to help run improvement projects. Discuss **two** reasons this approach may be beneficial and **two** limitations or potential problems with this arrangement.
(8 marks)



Chartered Quality Institute

CQI Examinations January 2016

Unit 305

Using Quality to Improve Business Performance (Level 3)

22 January 2016

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

The process map or flow chart is a commonly used tool to illustrate process flow. It has many uses including staff training, standardisation and supporting continuous improvement teams in identifying opportunities to reduce waste.

- (a) Name, illustrate, and explain the meaning of **four** process mapping symbols. (8 marks)
- (b) Using a business process of your choice, produce a process map, including the recognised symbols you identified in (a), and include 'swim lanes' to clarify responsibilities. (12 marks)

QUESTION 2

Failure Modes and Effects Analysis (FMEA) is a well-established tool that is team based and can be applied to design and manufacturing processes, as well as service provision.

- (a) Name and explain **three** situations where it would be appropriate to carry out an FMEA exercise. (6 marks)
- (b) Explain, step-by-step, how the exercise would be carried out. Within your answer you should include any supporting quality tools you would use. Finally illustrate the output using a fully completed FMEA template for a failure mode of your choice. (14 marks)

QUESTION 3

You are newly appointed to the Quality Manager position in your company and plan to run a quality improvement program.

You decide to run this program using the **DMAIC** approach.

Explain the stages and activities that will be carried out during the program, include the relevant tools and techniques you would employ at each stage as well as the stage deliverables.

(20 marks)

SECTION B – ANSWER TWO QUESTIONS ONLY

QUESTION 4

Effective quality improvement teams are typically proficient in the use of a number of quality improvement tools. Central to these are a group known as the Seven Basic Tools of Quality.

- a) The Ishikawa or Cause and Effect diagram is one of these tools – naming an issue for investigation of your choice, construct such a diagram, including **four** headings and also showing primary and secondary causes. (8 marks)
- b) Illustrate and explain the use of the following **three** tools, in each case describe how they would be used by the team.
- 1) Check sheets
 - 2) Pareto charts
 - 3) Scatter diagrams.

(12 marks)

QUESTION 5

You have been asked to set up and carry out a process capability study on a suitable process within your organisation.

You decide to carry out the study based upon a four-stage approach following a PDCA basis. Describe the stages of this study. Within your answer discuss, with illustrations where appropriate, the use of quality, planning, review or improvement tools/techniques that may be used as part of the exercise.

(20 marks)