

QUESTION 6

When carrying out team-based continual improvement projects there are a wide range of key factors that can influence project success.

a) Discuss the importance of the following in achieving a successful project outcome. Use examples from your own experiences as appropriate:

- (i) Problem definition and scope
- (ii) Data availability/collection
- (iii) Team leadership
- (iv) Team selection training and skills

(16 marks)

b) Briefly describe **two** ways senior management support can have a positive and key impact on achieving project success.

(4 marks)

QUESTION 7

In delivery of a service, or manufacture of a product, process variation can be a source of problems and ultimately cause the product or service to fail to satisfy customer needs or expectations.

a) Illustrate and describe how control charts are used to record and analyse process variation against defined targets.

(8 marks)

b) It is important to understand common and special cause variation within any process. Explain what is meant by these terms giving **two** examples of each.

(6 marks)

c) Scatter diagrams may be used to understand factors influencing variation in a process. Illustrate and describe how this type of diagram is used. Your answer should explain the terms 'strong', 'weak', 'positive' and 'negative' correlation.

(6 marks)



Chartered Quality Institute

CQI Examinations June 2013

Unit 305

Using Quality to Improve Business Performance (Level 3)

21 June 2013

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

Flow charting/process mapping is a recognised way of describing a process using standardised symbols laid out in chronological order. It can be particularly useful in identifying improvement opportunities through understanding departmental/functional interfaces in carrying out the process tasks.

- a) Map an example process of your choice using recognised symbols and showing functional responsibilities using swim lanes. This may be one you are familiar with from your own organisation.

(11 marks)

- b) Describe **three** potential benefits of mapping a process to the business, or the team carrying out the tasks.

(9 marks)

QUESTION 2

Effective quality improvement teams are trained and skilled in the use of a wide range of quality tools.

- a) The following are tools used in particular by such teams to present and quantify quality issues to enable targeted corrective actions:

- (i) Check sheets
- (ii) Pareto charts
- (iii) Spot or defect location charts

Illustrate and explain these **three** tools.

(12 marks)

- b) The Ishikawa or cause and effect diagram can be particularly effective when used by a quality improvement team as a problem-solving tool.

Illustrate this type of diagram showing examples of primary and secondary causes for an identified quality issue of your choice.

(8 marks)

QUESTION 3

Formalised quality improvement teams such as quality circles use brainstorming in order to maximise their understanding of root causes of a problem and also as an aid to define solutions. Affinity diagrams are commonly used in conjunction with this technique.

Describe, step by step, how an effective brainstorming exercise would be run. Include in your answer any 'ground rules' that the meeting facilitator would need to establish prior to the exercise. Finally, illustrate how an affinity diagram could be used to group the output of the exercise.

(20 marks)

SECTION B – ANSWER TWO QUESTIONS ONLY

QUESTION 4

When developing a new product or service it is critical that failure risks are identified and reduced or eliminated at a sufficiently early stage in the project. FMEA can be a powerful tool for risk identification and reduction when effectively applied.

Describe how a typical FMEA exercise would be run. Include in your answer an example of an FMEA chart/template showing **two** potential failure modes of your choice which could be created by such an exercise.

(20 marks)

QUESTION 5

As company Quality Manager you are informed by the Customer Service Team that customer complaints have increased significantly on one of your product lines and you have been asked to run a formal improvement project to investigate and tackle the issues. Selecting a recognised improvement process, describe how you will use it to understand and address the underlying issues and then implement appropriate and effective corrective actions. For each stage of the process, suggest and describe the appropriate quality tools you would use.

(20 marks)

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