

QUESTION 6

Process mapping/flow charting is a commonly used tool to aid clear understanding of workflow.

(a) Illustrate **THREE** flow charting symbols and clearly explain what is meant by each one.

(6 marks)

(b) Using these, and other recognised symbols as appropriate, create a process map for **ONE** of the following:

- A complete sales order process
- Assembly of a manufactured item of your choice.

(8 marks)

(c) Name and explain **THREE** wastes that mapping of a business process could identify allowing improvements to be made.

(6 marks)

QUESTION 7

There are seven commonly recognised tools, often referred to as the basic tools of quality, that are used for investigating quality issues and targeting corrective actions. They are listed below:

- Histograms
- Scatter plots
- Pareto analysis
- Ishikawa/fishbone diagrams
- Stratification
- Control charts
- Check sheets.

(a) Taking **FIVE** of the above, illustrate and explain how data/information is presented for analysis. For each chosen tool describe the situation in which it would ideally be used.

(10 marks)

(b) Brainstorming and affinity diagrams are often used together to explore an issue in order to identify solutions. Describe, step by step, how a brainstorming exercise would be carried out and clearly show how an affinity diagram could be used to complement this exercise.

(10 marks)



Chartered Quality Institute

CQI Examinations June 2011

Unit 305

Using Quality to improve Business Performance (Level 3)

24 June 2011

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.

SECTION A – ANSWER ALL QUESTIONS

QUESTION 1

The house of quality diagram is a key tool used in carrying out a quality function deployment (QFD) exercise.

- (a) Construct an example house of quality diagram, labelling the main headings and attributes of the product or service being evaluated. **(8 marks)**
- (b) Explain how a well run QFD exercise can bring competitive advantage to a business. **(9 marks)**
- (c) List **THREE** reasons a QFD exercise may be ineffective in delivering the desired results. **(3 marks)**

QUESTION 2

The quality circle approach first emerged in Japan in the 1960s. Now widespread, their use has become central to many quality improvement programs.

- (a) Explain the key stages of activity a company would go through in setting up and running a quality circle, the people who would be involved at each stage and how the team would be selected. **(12 marks)**
- (b) List and explain **FOUR** key tools a quality circle would be likely to employ in a quality improvement programme. **(8 marks)**

QUESTION 3

Failure mode and effects analysis (FMEA) is a valuable tool for assessing risk in the design of a product or delivery of a service.

- (a) Using an example of your choice, describe how an FMEA exercise would be carried out. Explain clearly how risks would be evaluated and prioritized and the typical actions that would be generated by the process. Include an example FMEA worksheet with **TWO** selected and evaluated failure modes. **(12 marks)**
- (b) Identify and explain **TWO** benefits and **TWO** potential limitations of the FMEA technique. **(8 marks)**

SECTION B – ANSWER TWO QUESTIONS ONLY

QUESTION 4

Goal deployment is a way of setting strategic goals aimed at fully aligning the workforce with the company corporate vision. Where successfully applied it has seen companies gain and consolidate competitive advantage over their rivals.

- (a) Explain how goal deployment works illustrating your answers with diagrams and examples where appropriate. **(10 marks)**
- (b) Explain how this approach can bring advantages in terms of the following areas:
 - (i) Accountability and process ownership
 - (ii) Enhanced staff morale and retention
 - (iii) Achieving competitive advantage
 - (iv) Measuring success.**(10 marks)**

QUESTION 5

Benchmarking has been defined as: “A standardized method for collecting and reporting critical operational data in a way that enables relevant comparison of the performances of different organizations or programmes.” (European Commission, Education and Training, 2008).

- (a) Four commonly used types of benchmarking are:
 - (i) Generic
 - (ii) Functional
 - (iii) Competitive
 - (iv) Internal.

Selecting **THREE** of the above describe how each operates using examples where appropriate.

- (12 marks)**
- (b) Explain **TWO** key potential benefits of a successful benchmarking programme and **TWO** common issues which lead to these programs failing to deliver the required results. **(8 marks)**