SECTION A – ANSWER ALL QUESTIONS

QUESTION 1

A common method of product monitoring is by the use of sampling techniques.

(a) Explain what is meant by the term product sampling.

(6 marks)

(b) Briefly explain one advantage and one disadvantage of this method of product monitoring.

(6 marks)

(c) What do the following standard notations mean?

(4 marks)

Reference	Notation
1	n
2	$\bar{X}$
3	$\tilde{X}$
4	S

(d) Name and define, with an example of each, the two types of data used in product sampling.

(4 marks)

QUESTION 2

Data collection is key to monitoring and measuring for quality.

(a) When considering data collection there are three stages to consider: input, process and output. Briefly discuss the types and value of data collected at each of these stages.

(10 marks)

(b) In an organisation, explain who is best placed to collect quality monitoring data and say why.

(5 marks)

(c) Explain what the key consideration will be when identifying which attributes of a finished product should be monitored.

(5 marks)

QUESTION 3

Good management practices are based on the use of facts, data and information. This allows for objective decision making that will lead to positive actions.

(a) What are the advantages of using a factual approach to decision making?

(8 marks)

(b) Explain how a factual approach to decision making could be implemented from the perspective of a) Senior Managers, b) Supervisors, and c) Operators.

(12 marks)

SECTION B – ANSWER TWO QUESTIONS ONLY

QUESTION 4

Variation is the term applied to any differences that occur in products, services and processes. There are two types of variation, common cause and special cause.

(a) Define and discuss each type of variation.

(15 marks)

(b) What strategy should be adopted for each type of variation?

(5 marks)

QUESTION 5

Data is defined in the dictionary as 'a series of observations, measurements, or facts; information'. In an organisation, there are a number of measures that require data collection.

(a) Name and describe, with an example of each, three common measures used by organisations.

(10 marks)

(b) For each of the three types or methods selected, explain how you would visualise (graphically present) the data collected?
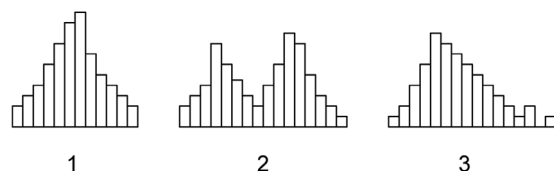
(10 marks)

QUESTION 6

A tally chart is a simple document that is used for collecting data in real-time and at the location where the data is generated.

(a) Explain, with an illustration, how a tally chart is constructed and how data is recorded on it.

(14 marks)

(b) Name and explain the distribution patterns shown in the following three diagrams.

(6 marks)

QUESTION 7

The KPI (Key Performance Indicator) is a valuable tool used by many organisations.

(a) Explain what a KPI is and what it is used for.

(5 marks)

(b) Give an example of a KPI at each of the following levels; explain how it could be measured and recorded and over what period and for how long.
(i) Management.
(ii) Supervisor.
(iii) Operator.

(15 marks)

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