



UNIVERSITY OF KELANIYA - SRI LANKA

Centre for Distance and Continuing Education

Faculty of Commerce & Management Studies

Bachelor of Business Management (General) Degree Third Year Examination (External) – 2023

November - 2025

BMGT E3035 – Total Quality Management

Time: 03 hours

INSTRUCTIONS TO CANDIDATES

- 1. This paper contains THREE parts: Part 1, Part 2, and Part 3.**
- 2. There are NINE questions in total, with THREE questions in each part.**
- 3. You must select at least ONE question from EACH of the three parts. Your fourth question can be chosen from any part.**
- 4. Each question carries 25 marks.**
- 5. All questions carry equal marks. The distribution of marks within a question is indicated.**
- 6. Start each question on a new page.**
- 7. Where applicable, show all calculations and assumptions clearly.**
- 8. Graph papers will be provided**

Part 1

Question No. 01

"QuickServe Restaurant Style" Company's Total Quality Management (TQM)
The "QuickServe Restaurant Style" company is facing a high staff turnover rate and inconsistent customer experiences across all its restaurants. Customer feedback from various quarters has revealed complaints regarding order accuracy, cleanliness, and slow service. While each restaurant manager has been empowered, standardized best practices have not been identified. The head office wants to use TQM to build a unified culture of excellence for everyone.

- a) Evaluate QuickServe company's current situation according to the three fundamental principles of Total Quality Management: 'Customer Focus', 'Process Orientation', and 'People Involvement'. For each principle, provide one specific example demonstrating its non-adherence.

(10 Marks)

- b) Design a detailed foundation training program based on Total Quality Management for the QuickServe company. Summarize a basic training unit targeted for all employees. This unit must explain the necessity of TQM and integrate the roles of employees across the frontline staff, restaurant managers, and head office departments to achieve total quality.

(15 Marks)

(Total 25 Marks)

Question No. 02

Compare and contrast the core philosophies of two major TQM pioneers: W. Edwards Deming and Philip B. Crosby. Your answer should focus on their central definitions of quality and their primary methodological emphasis.

(Total 25 Marks)

Question No. 03

A local coffee shop is experiencing a high rate of customer complaints regarding inconsistent beverage taste and slow service. Using the TQM principle of "Process Approach," outline the sequential steps the manager should take to analyze and improve this situation.

(Total 25 Marks)

Part 2

Question No. 04

You are a Quality Manager at "GlowDerm Cosmetics." The final filling process for a 50ml jar of face cream is critical. Too little cream leads to customer complaints, and too much cream is a direct cost to the company. The process is designed to fill each jar with a mean (μ) of 50.5 ml, with a standard deviation (σ) of 0.4 ml. This slight overfill is intentional to ensure no jar contains less than the advertised 50ml (which has a weight equivalent of 50 ml).

Over the last 10 hours, you have taken a sample of 5 consecutive jars every hour. The weight measurements (in ml) are recorded below.

Sample (Hour)	Jar 1	Jar 2	Jar 3	Jar 4	Jar 5
1	50.3	50.7	50.1	51.0	50.5
2	50.9	50.4	50.6	49.8	50.2
3	50.0	50.5	50.8	51.2	50.9
4	49.9	50.2	50.3	49.7	50.1
5	50.8	50.6	51.1	50.4	50.7
6	51.0	51.3	50.9	51.5	51.2
7	50.1	49.8	49.5	50.3	49.9
8	50.4	50.7	50.0	50.8	50.5
9	51.2	51.5	50.8	51.4	51.1
10	49.5	49.9	49.2	50.1	49.6

Control Chart Constants for n=5:

$A_2 = 0.577$, $D_3 = 0$, $D_4 = 2.114$

You are required to,

- a) Using above information, draw an appropriate graph.
(05 Marks)
- b) Based on your chart, is the filling process in a state of statistical control? Explain your reasoning by referring to control chart rules (e.g., points outside limits, trends, runs).
(10 marks)
- c) What is the practical implication of your conclusion for the production manager? Should the process be adjusted, left alone, or investigated?
(10 marks)

(Total 25 marks)

Question No. 05

QuickBite Pizza launched a high-stakes marketing campaign: "Guaranteed 30-Minute Delivery or Your Pizza is Free." Initially, sales increased, but within a month, the promotion was generating significant financial losses due to the high number of free pizzas being given away. The management team is now divided. One group wants to abandon the campaign entirely, while another believes they just need to "try harder" and push the delivery drivers to be faster. As a consultant specializing in Total Quality Management, you have been hired to resolve this issue.

Describe the logical, data-driven process you would advise QuickBite Pizza to follow by answering the following questions.

- a) Explain the first critical step the company must take *before* making any decision about the campaign, justifying why this step is essential.

(05 marks)

- b) Identify the specific quality tool that is central to this analysis and describe exactly how the company should use it, including what data to collect and how to analyze it.

(10 marks)

- c) Based on a hypothetical outcome of your analysis (you may describe a likely scenario), provide one clear and logical recommendation for what QuickBite should do with its marketing promise.

(10 marks)

(Total 25 marks)

Question No. 06

You are the Quality Manager at "Apex Phones," a smartphone manufacturer. Your assistant has compiled defect data from the final inspection station over one month. The initial list contained over 40 different defect types. The assistant has consolidated this data, identifying the seven most frequent specific issues and grouping all remaining minor defects into an "Others" category. The data is presented in the table below:

Defect Type	Frequency (Number of Occurrences)
Scratched Screen	210
Faulty Camera	185
Battery Drains Quickly	172
Dead Pixels on Display	95
Microphone Not Working	88
Software Glitch (OS Crash)	75
Charging Port Loose	62
Others	192

- a) Construct a complete Pareto Analysis Table.

(10 Marks)

- b) Based on your table, sketch a fully-labeled Pareto Chart on the grid provided.
(10 Marks)
- c) Based on your chart, write a brief memo (3-4 sentences) to the Production Manager. Identify the "vital few" defect types that the team should prioritize for improvement and justify your recommendation using the data from your analysis.
(05 Marks)
(Total 25 marks)

Part 3

Question No. 07

- a) Compare and contrast the primary focus of Quality Circles with the core methodology of Lean Six Sigma.
(10 marks)
- b) Explain how one organization might use both approaches complementarily to address different types of problems.
(15 marks)
(Total 25 marks)

Question No. 08

An electronics assembly company wants to win the *Deming Prize*:

- a) Identify two key criteria from the Deming Prize examination framework they must excel in.
(10 marks)
- b) Propose how the company could strategically use *benchmarking* not just to copy, but to innovate and exceed the performance of the current industry leader, thereby creating a unique competitive advantage.
(15 marks)
(Total 25 marks)

Question No. 09

"Apex Electronics" is a company that takes pride in its high-quality products. However, the Finance Director has raised concerns about rising operational costs that are reducing profit margins. An initial review reveals significant spending in the following areas:

- A large team of final product inspectors.
- High costs for reworking faulty circuit boards.
- Frequent warranty claims and repairs.
- Overtime payments for production staff to meet targets after rework delays.
- A dedicated customer support team to handle complaints.

The Production Manager argues, "This is the cost of doing business to maintain our quality standards." The Finance Director believes these costs are excessive and can be reduced.

- a) Classify the listed costs from the scenario into the four standard categories of the Cost of Quality (Prevention, Appraisal, Internal Failure, External Failure). Provide a brief justification for each classification.

(10 Marks)

- b) Based on your classification, evaluate the Production Manager's statement that these are necessary costs. Explain which category of costs as a percentage should ideally increase to reduce the total COQ.

(15 Marks)

(Total 25 marks)