

# Fundamentals Exam

## Introductory Comments:

The purpose of this examination is to identify those applicants who possess the minimum level of capabilities in Theory of Constraints (TOC) basics that are needed to grasp the advanced knowledge required to achieve certification in a TOC applications area. Successful completion of this examination will result in the receipt of a "TOCICO Certificate of Achievement". Please note that this is not a TOCICO certification, but simply an acknowledgement that the candidate has passed the entry exam. The Fundamentals Exam is a three-part exam in the following broad areas: (1) TOC Fundamentals Concepts, (2) TOC Thinking Processes, and (3) TOC Applications. Total maximum allowable time for the entire examination is 4 hours.

## Part A - TOC Fundamentals (approx. 25%)

**Objective:** Demonstrate an understanding of TOC basic beliefs, paradigms, and concepts. Seek to show the ability to apply these fundamental ideas within a realistic scenario. Compare and contrast TOC basics with conventional wisdom approaches.

1. Understand the conceptual difference between managing a 'simple' and a 'complex' system. Have the capability to apply this understanding in a specific situation.
2. Know and understand the five-step focusing process. Be able to apply these steps within a realistic scenario.
3. Understand the relationships between a realistic goal, necessary conditions for goal achievement, and any prerequisites for those meeting the necessary conditions. For a particular scenario, apply these concepts in a meaningful manner.
4. Discuss system constraint(s), their relative importance, and various approaches to managing them.
5. Describe the TOC systemic or global metrics relative to organizations residing in different industrial sectors.
6. Differentiate between the 'cost' and 'throughput' world orientations.

## Part B – TOC Thinking Processes (approx. 25-30%)

**Objective:** Demonstrate a fundamental understanding of TOC Thinking Processes. For simplified scenarios, be able to determine and state sound logical relationships.

1. Identify the three questions associated with the Change Sequence. Briefly describe the managerial implications associated with each question. Be able to name the TP logic tools that are most closely associated with answering each query.
2. Distinguish between necessity-based and sufficiency-based logic.
3. Know the difference between a well-written and poorly-written undesirable effect (UDE).
4. Be able to create a logically-tight evaporating (or conflict) cloud for a particular situation.
5. Be able to create a small, logically-tight, twig or branch for a particular situation.
6. Explain why the real advantage in using the TP tools resides with identifying assumptions associated with entity relationships.
7. Discuss the TOC approach to develop true win-win solutions in long-standing conflicts.
8. Describe the concept of an injection and explain how it achieves its purpose.
9. Discuss the inherent logical linkages between policies, measurements, and behaviors.
10. Differentiate between effects and assumptions/facts of life entities within a logic structure. Identify the characteristics of and/or create a well-written entity.

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## Part C – TOC Applications (approx. 45-50%)

**Objective:** Demonstrate a fundamental knowledge and understanding of simple TOC applications in (1) internal supply chain management and logistics, (2) finance and measurement, and (3) single project management. In addition, show familiarity with the TOC approach to identifying and addressing each layer of resistance to change.

1. Create an effective plan for managing an internal supply chain including constraint/bottleneck identification, appropriate buffer management, determination of any necessary inspection and/or QC locations, and establishment of the necessary communication links.
2. Determine an optimal product mix for a simplified situation in which there is a functioning constraint.
3. Demonstrate your understanding and ability to manage a single specific project according to TOC Critical Chain principles. Focus is on identifying activities in the critical chain, locating and sizing necessary project and feeding buffers, and predicting expected total project completion time.
4. Identify the sequential layers of resistance to change that must be overcome in order to gain management's buy-in to implementing system-based improvements.

The TOCICO Website [www.tocico.org](http://www.tocico.org) provides a list of books and other reference materials which TOCICO members have found to be useful in preparing for the Fundamentals Examination and which describe the kinds of information and knowledge that a person needs to know to successfully complete the exam.

**Are you interested in sitting the Fundamentals exam?**

The UK-based TOC-Lean Institute is an approved TOCICO examination centre. Find out more on our website: [www.toc-lean.com/TOCICO\\_Exams.htm](http://www.toc-lean.com/TOCICO_Exams.htm)

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