



*When Recognition Matters*



## **EXAM PREPARATION GUIDE**

**PECB Certified Lead Disaster**

**Recovery Manager**

The objective of the “PECB Certified Lead Disaster Recovery Manager” examination is to ensure that the candidate has the knowledge, skills and expertise to support an organization in implementing, managing, monitoring and maintaining an IT Disaster Recovery plan. Other examination objectives include: ensure that the candidate has acquired the expertise to advise and guide an organization on IT Disaster Recovery best practices, ensure that the candidate has mastered the concepts, approaches, standards, methods and techniques for the implementation and effective management of IT Disaster Recovery services.

**The target population for this examination is:**

- Disaster Recovery professionals or consultants seeking to gain a comprehensive knowledge on Disaster Recovery
- IT Professionals and staff looking to enhance their technical skills and knowledge
- Individuals responsible for disaster recovery within an organization
- CxO and Senior Managers responsible for the Disaster Recovery Plan of an enterprise
- Members of a disaster recovery team
- Staff implementing or seeking to comply or get involved in a disaster recovery plan

**The exam content covers the following domains:**

- Domain 1: Fundamental principles and concepts of disaster recovery
- Domain 2: Disaster Recovery Plan Development
- Domain 3: Disaster Recovery subparts
- Domain 4: Recovery Sites, Recovery Facilities and Outsourced Services Capability
- Domain 5: Testing and Maintenance of a Disaster Recovery Plan
- Domain 6: Continual improvement of a disaster recovery plan

The content of the exam is divided as follows:

**Domain 1: Fundamental principles and concepts of disaster recovery**

**Main objective:** To ensure that the Lead Disaster Recovery Manager candidate can understand, interpret and illustrate the main disaster recovery concepts related to a Disaster Recovery Plan (DRP)

<b>Competencies</b>	<b>Knowledge statements</b>
<ol style="list-style-type: none"> <li>1. Understand and explain the difference and relationship between disaster recovery and business continuity</li> <li>2. Understand and explain the importance of disaster recovery planning</li> <li>3. Understand and explain the initiation phase of a disaster recovery plan</li> <li>4. Ability to explain and illustrate the general planning process of disaster recovery</li> </ol>	<ol style="list-style-type: none"> <li>1. Knowledge of the main disaster recovery concepts</li> <li>2. Knowledge of disaster recovery planning process</li> <li>3. Knowledge of the characteristics of a DR scope in terms of organizational, technological and physical boundaries</li> </ol>

## Domain 2: Disaster Recovery Plan Development

**Main objective:** To ensure that the Lead Disaster Recovery Manager candidate can understand, interpret and provide guidance on how to implement and manage a disaster recovery plan based on best practices.

Competencies	Knowledge statements
1. Ability to perform the different steps of the risk assessment phases	1. Knowledge of business impact analysis and risk assessment.
2. Ability to identify, review and follow a Risk Assessment Approach relevant for a specific organization	2. Knowledge of recovery solutions
3. Ability to perform different steps of the business impact analysis (BIA)	3. Knowledge of risk mitigation strategies
4. Ability to clearly identify RTO and RPO and other important metrics	4. Knowledge of disaster recovery phases
5. Ability to compare possible recovery solutions and identify/analyze the advantages and disadvantages of each solution	5. Knowledge of the roles and responsibilities of the key actors during the implementation of a disaster recovery plan
6. Ability to compare cost vs capability of recovery options	6. Knowledge of the recovery metrics
7. Ability to develop a risk mitigation strategy related to critical business functions	7. Knowledge of DRP transition triggers
8. Ability to identify/develop each phase of the disaster recovery plan	8. Knowledge of the importance of DRP teams and key personnel
9. Ability to identify and develop transition triggers	
10. Ability to define disaster recovery teams and key personnel	

## Domain 3: Disaster Recovery Plan - Subparts

**Main objective:** To ensure that the Lead Disaster Recovery Manager candidate can understand, interpret and illustrate disaster recovery subparts

Competencies	Knowledge statements
1. Ability to define and implement each of the disaster recovery subparts	1. Knowledge of the characteristics of an incident response plans based on best practices
2. Ability to define and implement an incident response plan as a supporting part of the disaster recovery plan	2. Knowledge of the characteristics of an emergency response plan based on best practices
3. Ability to define and implement an emergency response plan as a supporting part of the disaster recovery plan	3. Knowledge of the features of a crisis management plan based on best practices
4. Ability to define and implement a crisis management plan as a supporting part of the disaster recovery plan	4. Knowledge of the features of an IT recovery plan based on best practices
5. Ability to define and implement an IT recovery plan as a supporting part of the disaster recovery plan	5. Knowledge of the features of a restoration plan based on best practices
6. Ability to define and implement a restoration plan as a supporting part of the disaster recovery plan	

**Domain 4: Recovery Sites, Recovery Facilities, and Outsourced Services Capability**

**Main objective:** To ensure that the Lead Disaster Recovery Manager candidate can understand, interpret and provide guidance on the evaluation, selection and managing Recovery Sites, Recovery Facilities and Outsourced Services Capability requirements

<b>Competencies</b>	<b>Knowledge statements</b>
<ol style="list-style-type: none"> <li>1. Ability to verify the extent to which identified recovery facilities requirements have been met</li> <li>2. Ability to verify the extent to which identified recovery sites requirements have been met</li> <li>3. Ability to verify the extent to which identified outsourced service capability requirements have been met</li> </ol>	<ol style="list-style-type: none"> <li>1. Knowledge of the recovery facilities</li> <li>2. Knowledge of the recovery sites</li> <li>3. Knowledge of the outsourced services capability</li> </ol>

**Domain 5: Testing and Maintenance of a Disaster Recovery Plan**

**Main objective:** To ensure that the Lead Disaster Recovery Manager candidate can, monitor, test and maintain a Disaster Recovery Plan

<b>Competencies</b>	<b>Knowledge statements</b>
<ol style="list-style-type: none"> <li>1. Ability to establish and maintain the functionality and validity of the plan</li> <li>2. Ability to develop, test schedules with a pre-defined set of test scenarios</li> <li>3. Ability to initiate necessary corrections to the DRP</li> <li>4. Understand and interpret various DRP testing strategies</li> <li>5. Ability to conduct effective performance measurements</li> <li>6. Ability to conduct effective scalability planning</li> <li>7. Ability to monitor and assess the effectiveness of a DRP</li> <li>8. Understand the importance of continually maintaining and updating the DRP</li> </ol>	<ol style="list-style-type: none"> <li>1. Knowledge of the techniques and best practices to test the effectiveness of a DRP</li> <li>2. Knowledge of the main concepts and components related to a DRP test</li> <li>3. Knowledge of the importance of DRP testing</li> <li>4. Knowledge of effective performance measurement techniques</li> <li>5. Knowledge of the effective monitoring and evaluation of a DRP</li> <li>6. Knowledge of scalability planning</li> </ol>

**Domain 6: Continual Improvement of a Disaster Recovery Plan**

**Main objective:** To ensure that the Lead Disaster Recovery Manager candidate can provide guidance on the continual improvement of a Disaster Recovery Plan

<p style="text-align: center;"><b>Competencies</b></p>	<p style="text-align: center;"><b>Knowledge statements</b></p>
<ol style="list-style-type: none"> <li>1. Ability to understand the principle and concepts related to continual improvement</li> <li>2. Ability to counsel an organization on how to continually improve the effectiveness and the efficiency of a DRP</li> <li>3. Ability to implement DRP continual improvement processes in an organization</li> <li>4. Ability to determine the appropriate business improvement tools to support continual improvement processes of a specific organization</li> <li>5. Ability to identify, analyze the root-causes of different problems and propose action plans to treat them.</li> </ol>	<ol style="list-style-type: none"> <li>1. Knowledge of the main concepts related to continual improvement</li> <li>2. Knowledge of the characteristics and the difference between the concepts of effectiveness and efficiency.</li> <li>3. Knowledge of the concept and techniques to perform a benchmarking</li> <li>4. Knowledge of the characteristics and the difference between corrective actions and preventive actions.</li> <li>5. Knowledge of the main processes, tools, and techniques used by professionals to identify the root-causes of different problems</li> </ol>

Based on these 6 domains and their relevance, 12 questions are included in the exam. The passing score is established at **70%**.

		Level of Understanding (Cognitive/Taxonomy) Required		Number of Questions per competency domain	% of test devoted to each competency domain	Number of Points per competency domain	% of Points per competency domain	
		Points per Question	Questions that measure Comprehension, Application and Analysis					Questions that measure Synthesis and Evaluation
Competency/Domains	Fundamental principles and concepts in Disaster Recovery	5	X	2	16.67	10	14.29	
		5	X					
	Disaster Recovery Plan Development	5	X	4	33.33	30	42.85	
		10						X
		5						X
		10	X					
	Disaster Recovery plan subparts	5		X	2	16.67	10	14.29
		5	X					
	Recovery Sites, - Recovery Facilities, - Outsourced Services Capability	5		X	1	8.33	5	7.14
	Testing and Maintenance of a Disaster Recovery Plan	5		X	2	16.67	10	14.29
		5	X					
	Continual Improvement of disaster recovery plan	5	X		1	8.33	5	7.14
Total points		70						
Number of Questions per level of understanding			7	5				
% of Test Devoted to each level of understanding (cognitive/taxonomy)			53.85	46.15				

After successfully passing the exam, the candidates will be able to apply for the credentials of PECB Certified Lead Disaster Recovery Manager, depending on their level of experience.

## **TAKE THE CERTIFICATION EXAM**

Candidates will be required to arrive at least thirty (30) minutes before the beginning of the certification exam. Candidates arriving late will not be given additional time to compensate for the late arrival and may be denied entry to the exam room (if they arrive more than 5 minutes after the beginning of the exam scheduled time).

All candidates will need to present a valid identity card with a picture such as a driver's license or a government ID to the invigilator.

The exam duration is three (3) hours.

**The questions are essay type questions.** The questions are essay type questions. This type of format was chosen because the intent is to determine whether an examinee can write a clear coherent answer/argument and to assess problem solving techniques. Because of this particularity, the exam is set to be “open book” and does not measure the recall of data or information. The examination evaluates, instead, comprehension, application, analysis, synthesis and evaluation, which mean that even if the answer is in the course material, candidates will have to justify and give explanations, to show they really understood the concepts. At the end of this document, you will find sample exam questions and their possible answers.

As the exam is “open book” the candidates are authorized to use the following reference materials:

- Course notes from the Participant Handout,
- Any personal notes made by the student during the course and
- A hard copy dictionary

### **The use of electronic devices, such as laptops, cell phones, etc., is not allowed.**

All attempt to copy, collude or otherwise cheat during the exam will automatically lead to the exam's failure.

PECB exams are available in English. For availability of the exam in a language other than English, please contact [examination@pecb.com](mailto:examination@pecb.com)

## **RECEIVE YOUR EXAM RESULTS**

Results will be communicated by email in a period of 6 to 8 weeks, after taking the exam. The results will not include the exact grade of the candidate, only a mention of pass or fail.

Candidates who successfully complete the examination will be able to apply for a certified scheme.

In the case of a failure, the results will be accompanied with the list of domains in which the candidate had a low grade, to provide guidance for exams' retake preparation.

Candidates who disagree with the exam results may file a complaint. For more information, please refer to [www.pecb.com](http://www.pecb.com)

### **EXAM RETAKE POLICY**

There is no limitation on how many times a candidate can retake the same exam. However, there are some limitations in terms of allowed time-frame in between exams.

When candidates fail the examination, they are only allowed to retake the examination once within 12 months after the first attempt. If second examination is unsuccessful, candidates will be allowed to retake the exam only after 1 year (12 months). Retake fee applies.

Only candidates, who have completed a full PECB training but fail the written exam, are eligible to retake the exam for free, under one condition:

“A candidate can only retake the exam once and this retake must occur within 12 months from the initial exam's date.”

When candidates fail the same examination for the second time, their file is automatically closed for 1 year.

### **CLOSING FILES**

Closing a file is equivalent to rejecting a candidate's application. As a result, when candidates request that their file be reopened, PECB will no longer be bound by the conditions, standards, policies, candidate handbook or exam preparation guide that were in effect before their file was closed.

Candidates who want to request that their file be reopened must do so in writing, and pay the required fees.

### **EXAMINATION SECURITY**

A significant component of a successful and respected professional certification credential is maintaining the security and confidentiality of the examination. PECB relies upon the ethical behaviour of certificate holders and applicants to maintain the security and confidentiality of PECB examinations. When someone who holds PECB credentials reveals information about PECB examination content, they violate the PECB Code of Ethics. PECB will take action against individuals who violate PECB Policies and the Code of Ethics. Actions taken may include permanently barring individuals from pursuing PECB credentials and revoking certifications from those who have been awarded the credential. PECB will also pursue legal action against individuals or organizations who infringe upon its copyrights, proprietary rights, and intellectual property.

## SAMPLE EXAM QUESTIONS AND POSSIBLE ANSWERS

### 1. Fundamental principles of disaster recovery

Please explain the purpose of conducting a risk assessment and a business impact analysis in the disaster recovery planning process.

**Possible Answer:**

*After the disaster recovery project is initiated the first steps of the disaster recovery planning process are the risk assessment and business impact analysis. These steps are conducted in order to get an understanding of what systems or processes are at risk and what is the potential impact of those risks on organization's critical business functions and also to determine what resources are required for recovery within an acceptable time frame. Another important reason why risk assessment and BIA (business impact analysis) are performed is to identify and define MAO (maximum acceptable outage) and other recovery metrics (such as: RTO, RPO).*

### 2. Disaster Recovery Plan Development

Activating the DR plan is clearly one of the most important actions/decisions to be made when it comes to DRP execution. How would you as a DR Manager establish the criteria for activating the DR plan?

**Possible answer:**

*A clear set of parameters should be developed so they can be used to determine if or when to activate the DR plan, because you don't want to activate your DR plan for every little malfunction that your business runs into. Additionally, it should be clearly defined how the plan is activated, as well as who is authorized to activate it and what steps that person or persons will have to take to initiate the DR activities. Various levels of disaster or disruption should be defined in order to know if, when, and how to implement the plan. For instance, if a company experiences a network security breach, different phases of the DR plan should be activated in contrast with for example if your server room is flooded. Thus, defining various types and levels of disaster is important in understanding what should trigger the implementation of the DR plan.*

### 3. Testing and Maintenance of a Disaster Recovery Plan

Why should the DR plan be tested and what are some of the best methods to test the DR plan?

**Possible Answer:**

*Disaster Recovery Plan testing should be done annually, because IT equipment, and applications are changing constantly. Many organizations run their DR test over a weekend. They stop operations at the primary site, restore backups at the recovery site, run some tests, and then switch back to the primary site.*

*Some of the best methods to test the DR plan include:*

**Simulation (Tabletop exercise)**

*All personnel with DR responsibilities will meet and go through a practice session. This type of testing enacts recovery procedures but there is no alternate processing.*

**Parallel**

*Parallel testing is a full test of the recovery plan using all personnel. Primary processing does not stop. This type of testing ensures that processing will run at an alternate site. Most common type of recovery plan testing.*

**Full-interruption**

*Disaster is replicated to the point of stopping normal operations. The disaster recovery plan is implemented as if a real disaster was happening. However, it can be scary and can cause its own disaster, but it is the best way to completely test.*

*The testing is also iterative when you run a tabletop exercise ensure that everything is planned, reviewed, corrected, and accepted individually. The same applies for parallel simulation.*

*Only if 100% confident run in full interruption mode i.e. full disaster recovery simulation mode after disaster.*