

# Test **Management**: Part II

Software Testing: IN3240 / IN4240

# Summary

## Test **organisation**

Independence | Tasks of the test leader and testers

## Test **planning** and **estimation**

Activities | Entry and exit criteria | Estimation | Strategy and approach

## Test **progress** monitoring and **control**

## **Configuration** and **management**

## **Risk** and testing



# Part I: Close-ended questions

# Question 1

Which of the following **metrics** would be most **useful** to **monitor** during **test execution**?

- a. Percentage of test cases written
- b. Number of test environments remaining to be configured
- c. Number of defects found and fixed
- d. Percentage of requirements for which a test has been written



# Question 1: Clues

Which of the following **metrics** would be most **useful** to **monitor** during **test execution**?

## Test **progress monitoring**

Give **feedback** and visibility of the **test effort** / activities

Monitoring **information** can be collected **manually** / **automatically**

**Metrics** can be used to measure **exit criteria**

## Common test **metrics**

% of work done in test case preparation	Test case execution (e.g. number of tests run/not run)	Defect information (e.g. defect density, found / fixed)	Dates of test milestones
% of work done in test environment preparation	Test coverage (requirements, risks, code)	Subjective confidence of testers in the product	Testing costs

# Question 1: Answer

Which of the following **metrics** would be most **useful** to **monitor** during **test execution**?

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# Question 2

In a test **summary report**, the project's test leader makes the following statement:

*“The payment processing **subsystem** fails to **accept payments** from American Express cardholders, which is considered a **must-work feature** for this release.”*

This statement is likely to be found in which **section**?

- a. Evaluation
- b. Summary of activities
- c. Variances
- d. Defect description

# Question 2: Clues

This statement is likely to be found in which **section**?

Test **reporting**

**Summarising information** about the **test** effort

What happened during a test period?

E.g. dates when exit criteria were met

Analysed **metrics** to **support decisions** about future actions

Adequacy of the **test objectives** for that test level

Adequacy of the **test approaches** taken

**Effectiveness** of the **testing** with respect to its test objectives





# Question 2: Clues

This statement is likely to be found in which **section**?

*“The payment processing **subsystem** fails to accept payments from American Express cardholders, which is considered a **must-work feature** for this release.”*

## IEEE 829 Standard: TEST **SUMMARY** REPORT

### Test **summary report identifier**

#### **Summary**

Identify all relevant support materials  
Test items / Environment / References

#### **Variances**

Document changes or deviations from test plan

#### **Comprehensiveness** assessment

Evaluation of the test effort in terms of objectives  
Assess quality / effectiveness of testing

#### **Summary** of results

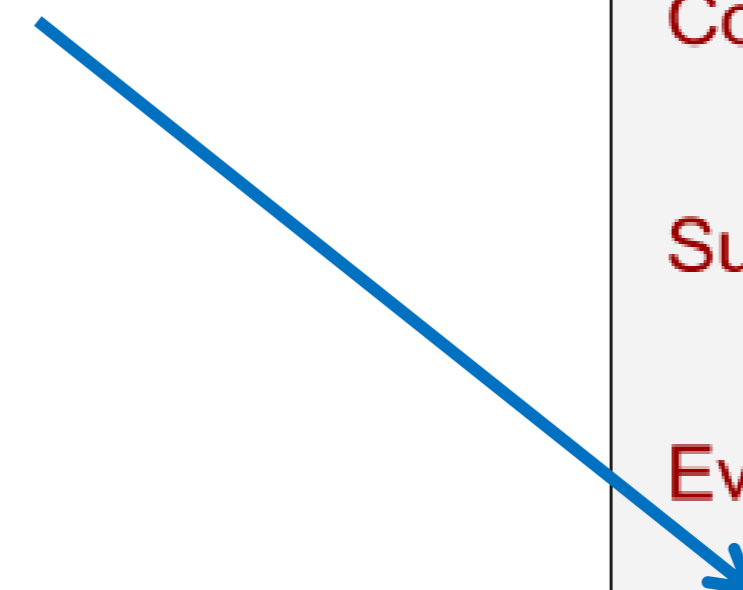
Report overall status of incidents  
Defect patterns / Open, unresolved incidents

#### **Evaluation**

Assess **quality** of the **software**  
**Limitations** → **Incomplete** or **partial functions**  
Failure likelihood

#### **Summary** of activities

#### **Approvals**



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# Question 3

During an **early** period of test **execution**, a **defect** is **located**, **resolved** and **confirmed** as resolved by **re-testing**, but is seen again later during **subsequent** test execution.

Which of the following is a **testing-related** aspect of **configuration management** that is most likely to have **broken** down?

- a. Traceability
- b. Confirmation testing
- c. Configuration control
- d. Test documentation management



# Question 3: Clues

Which is a **testing-related** aspect of **configuration management** most likely to have **broken** down?

## Configuration Management

Establish and maintain the integrity of the products of the software

Components

Data

Documentation

**Integrity** → Assurance of the **accuracy** and **consistency** of data through the life cycle

Ensure that **all items** of **testware** are:

Identified

Version controlled

Tracked

Maintain **traceability**  
**throughout** the test **process**



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# Question 4

You are working as a tester on a project to **develop** a **point-of-sales** system for grocery stores. Which of the following is a **product risk** for such a project?

- a. Arrival of a more reliable competing product on the market
- b. Delivery of an incomplete test release to the first cycle of system test
- c. An excessively high number of defect fixes fail during re-testing
- d. Failure to accept allowed credit cards

# Question 4: Clues

Which of the following is a **product risk** for a **point-of-sales system**?

## Risks

Possibility of a **negative** / undesirable **outcome**

Possible **problems** that may **endanger** the **objectives** of the **project** stakeholders

Risk **analysis** and **management** aid in **managing** possible negative **outcomes**

Two main **categories** of risks

**Product** risks

**Project** risks





# Question 4: Clues

Which of the following is a **product risk** for a **point-of-sales system**?

## Product Risks

Potential failure areas in the software

Risks specifically related to the **quality** of the **product**

Failure-prone software

Software / Hardware that **could cause harm** to the user

Poor software **characteristics**

Software that does **not perform** its **intended** functions





# Question 4: Answer

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# Question 5

A **product risk analysis** meeting is held during the **planning** period. Which of the following **determines** the **level of risk**?

- a. Difficulty of fixing related problems in code
- b. The harm that might result to the user
- c. The price for which the software is sold
- d. The technical staff in the meeting



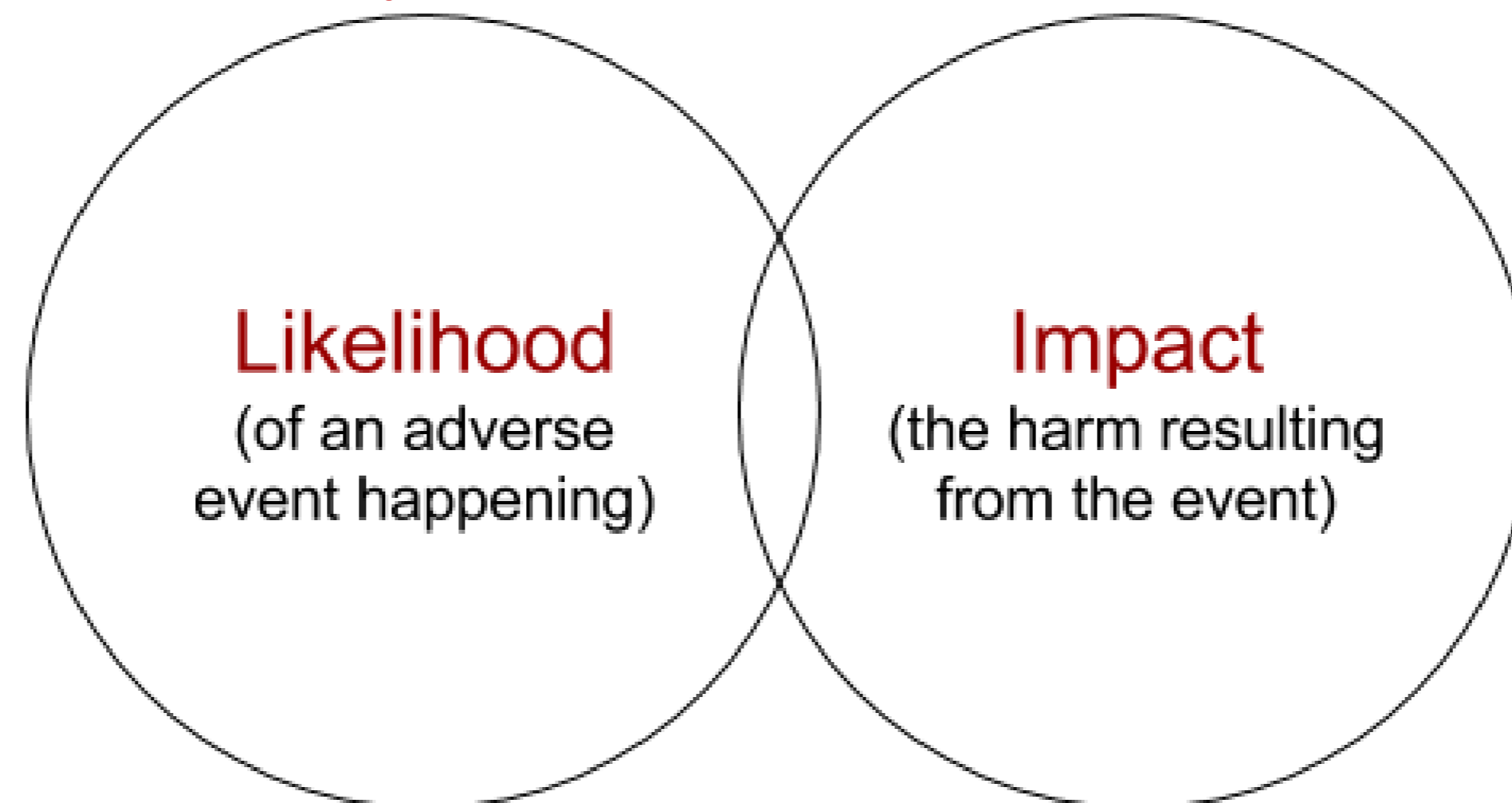
# Question 5: Clues

What **determines** the **level of risk** during a **product risk analysis** meeting in the **planning** period?

Determining the level of risk

**Likelihood** → What are the **chances**?

**Impact** → What are the **consequences**?



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# Question 6

You are writing a **test plan** using the **IEEE 829** template and currently completing the **Risks** and **Contingencies** section. Which of the following is most likely to be listed as a **project risk**?

- a. Unexpected illness of a key team member
- b. Excessively slow transaction-processing time
- c. Data corruption under network congestion
- d. Failure to handle a key use case



# Question 6: Clues

Which of the following is most likely to be listed as a **project risk**?

**Project** risks

Risks that surround the project's capability to deliver its objectives

Risks specifically related to **aspects** of the **project processes**

**Organisational** factors

Shortage of people, skill, training | Communication and attitude problems

**Technical** issues → Problems defining the right requirements

**Supplier** issues → Third-party failures



# Question 6: Answer

You are writing a **test plan** using the **IEEE 829** template and currently completing the **Risks** and **Contingencies** section. Which of the following is most likely to be listed as a **project risk**?

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# Question 7

You and the project stakeholders **develop** a **list** of **product** risks and **project risks** during the **planning** stage of a project. What **else** should you **do** with those **lists** of **risks** during test **planning**?

- a. Determine the extent of testing required for the product risks and the mitigation and contingency actions required for the project risks
- b. Obtain the resources needed to completely cover each product risk with tests and transfer responsibility for the project risks to the project manager
- c. Execute sufficient tests for the product risks, based on the likelihood and impact of each product risk and execute mitigation actions for all project risks
- d. No further risk management action is required at the test planning stage



# Question 7: Answer

What **else** should you **do** with those lists of **product** and **project risks** during test **planning**?

Risk-based **approach** during the **planning** stage

**Product** risks

Determine the **extent** of **testing** to be carried out

**Prioritise testing** in an attempt to **reveal** critical **defects** as **early** as possible

**Project** risks

**Identify** risk items

Determine **likelihood** and **impact** for each item

Define **mitigation** and **contingency** actions for the identified risks



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# Question 8

According to the **ISTQB Glossary**, a **product risk** is related to which of the following?

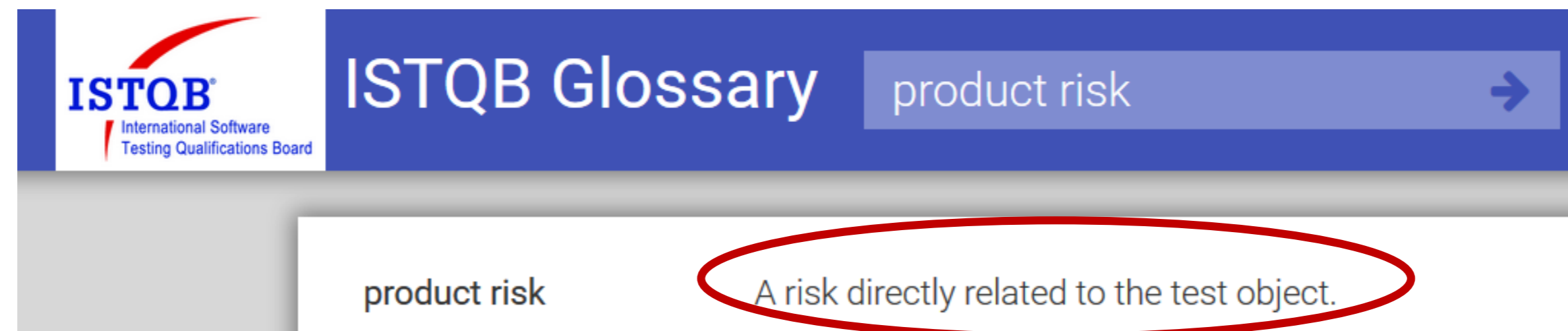
- a. Control of the test project
- b. The test object
- c. A single test item
- d. A potential negative outcome



# Question 8: Clues

According to the **ISTQB Glossary**, a **product risk** is related to which of the following?

**Product** risk: ISTQB definition



**Project** risk:

"A *risk* related to *management* and *control* of the *project* "

E.g. lack of staffing, strict deadlines, changing requirements, etc.

# Question 8: Answer

According to the **ISTQB Glossary**, a **product risk** is related to which of the following?

- a. Control of the test project
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# Question 9

Typical **test strategies** include:

1. **Risk-based** testing

Testing directed to areas of greatest risk

2. **Failure-based** testing

Test more in failure-prone areas

3. **Management-directed** testing

Test first the areas indicated by the org. management

Which are **true** and which are **false**?



# Question 9: Clues

## Risk-based testing

Idea: Can **organise** test **effort** to **reduce** the residual level of **risk**

Use of risk **analysis** to **prioritise** and **emphasise** appropriate tests

Guide **planning**, **specification**, **preparation**, and **execution**

Analysis and risk identification starts **early** in the project

Involves both **preventive** (mitigation) and **damage control** (contingency) measures

**Mitigation** → Testing to provide opportunities to reduce likelihood of defects

**Contingency** Testing to identify work-arounds for the defects that aren't discovered





# Question 9: Clues

## Failure-based testing

Idea: Can **organise** test **effort** based on **failure-prone** areas

Identifies **areas** most **likely** to hold **defects**, based on **complexity**

Some **functionality** is **harder** to **implement** than other

These areas are more **vulnerable** to defects

Starts **early** in the project and conducted **throughout** the **life** cycle

New problems / challenges will always emerge

## Management-directed testing

This is **not** a defined test **strategy** in the ISTQB syllabus





# Question 9: Answer

Typical **test strategies** include:

1. **Risk-based** testing **TRUE**

Testing directed to areas of greatest risk

2. **Failure-based** testing **TRUE**

Test more in failure-prone areas

3. **Management-directed** testing **FALSE**

Test first the areas indicated by the org. management

Which are **true** and which are **false**?



# Question 10

In a **defect report**, the tester makes the following statement:

*"At this point, I expect to receive an error message explaining the rejection of this invalid input and asking me to enter a valid input. Instead, the system accepts the input, displays an hourglass for between one and five seconds, and finally terminates abnormally, giving the message [Unexpected data type: 15. Click to continue]"*

This **statement** is likely to be **found** in which of the following **sections** of a **IEEE 829 Defect Report**?

- Summary
- Impact
- Item pass / fail criteria
- Defect description



# Question 10: Clues

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IEEE 829 Standard:

TEST DEFECT REPORT

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**Test defect report identifier**

**Summary**

Summary of actual defect

References to:

Test procedure used to discover the defect

Test logs showing actual execution of cases

**Defect description**

Detailed explanation of defect

Inputs / Expected results

Anomalies

Procedure step

**Impact**

Report actual damage caused by defect

Severity / Priority assessment



# Question 10: Answer

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# Question 11

According to the **ISTQB Glossary**, what do we call a **document** that describes **any event** that **occurred** during **testing** which requires **further investigation**?

- a. A bug report
- b. A defect report
- c. A test summary report



# Question 11: Clues

According to the **ISTQB Glossary**, what do we call a **document** that describes **any event** that **occurred** during **testing** which requires **further investigation**?

Defect

**Discrepancies** between **actual** and **expected** test **outcomes**

Defect management

The process of **recognising**, **investigating**, taking **actions**, and **disposing** of defect

Defect report

A **document** reporting on **any suspicious event** that occurred during testing

Requires **further investigation**

A decorative horizontal graphic at the bottom of the slide consisting of a series of overlapping right-pointing chevrons. The chevrons are light gray, with the final one on the right being a darker shade of gray.

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# Question 12

A **product risks analysis** is performed during the **planning** stage of the test process. During the **execution** stage, the test manager directs testers to **classify** each **defect** report by the **known product risk** it relates to (or by '**other**').

Once a week, the test manager runs a **report** that **shows** the percentage of **defects** related to each **known product risks**, and to **unknown risks**.

What is one **possible use** of such a **report**?

- a. To identify new risks to system quality
- b. To locate defect clusters in product subsystems
- c. To check risk coverage by tests
- d. To measure exploratory testing





# Question 12: Clues

What is one **possible use** for a **report** showing **defects** related to **known** product risks and **unknown risks**?

## Objectives of a defect report

Provide **developers** with feedback about defects to:

Enable **identification**, **isolation**, and **corrective** measures

Provide **test leaders** with feedback about defects to:

Track system **quality**

Measure test **progress**

Provide **ideas** for test process **improvement**

**Identify** potential **new risks** to system quality



# Question 12: Answer

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# The slides are made by

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