

Preparation Guide for IPMA® Individual Certification

Based on Project Management by ICB4



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IPMA[®]



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PREFACE

Welcome to the Preparation Guide for IPMA Individual Certification, based on Project management by ICB4. This guide has been carefully compiled to assist candidates in their journey towards the International Project Management Association exams.

We live in uncertain times when many changes affect our lives. Think of global warming, developments such as artificial intelligence and increased global tensions. These dynamics not only affect the nature of projects we undertake but also how we carry out these projects.

A significant portion of economic activities worldwide is now project-based, a trend that continues to gain momentum. This is attributable to the increasing complexity of challenges demanding international collaboration and the widespread adoption of project-orientated organisational structures. As a result, competences in project management have become an indispensable asset.

For many years, IPMA has developed an Individual Competence Baseline and a certification scheme structured across four competency levels: D, C, B, and A. This is proving to be especially beneficial. Understanding one's competences empowers project professionals to identify their strengths and areas for growth effectively.

The IPMA certification is recognised worldwide as a hallmark of competence and excellence in project management, encompassing a wide range of competences vital for successful project leadership. We can proudly say that our competence scheme is unique and valued worldwide as a trusted and globally renewed proof of successful delivery.

The certification process for levels D, C, and B entails passing an examination. Recently, IPMA released the book *Project Management by ICB4*, which provides detailed insights into the knowledge areas across the various competence elements.

The preparation guide represents the next phase in this progression, tailored specifically for individuals studying and preparing for the IPMA exams. With its many multiple-choice and open-ended questions and sample answers, it serves as an invaluable aid in navigating the path toward obtaining an international IPMA certificate.

We wish you every success in your pursuit of excellence in project management.



Prof Dr Mladen Vukomanović, IPMA President

International Project Management Association (IPMA) is the oldest non-profit professional organisation dedicated to promoting excellence and professionalism in project, program, and portfolio management. It was founded in 1965, in Switzerland and nowadays operates in more than 70 countries worldwide through its Member Associations, thus providing a global platform for connecting practitioners and organisations, enabling collaboration and cooperation, sharing ideas and benchmarking, as well as advancing practices and competences in the field. Join the IPMA community at: www.ipma.world.

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1. GENERAL INTRODUCTION

Managing projects is becoming increasingly important, and competences in project management have become indispensable. Therefore, The International Project Management Association (IPMA) has developed an Individual Competence baseline, version 4 (ICB4), and a certification scheme based on four competence levels: D, C, B, and A. As part of the certification for levels D, C and B, candidates need to pass an exam.

Recently, IPMA published the book *Project Management by ICB4*, in which the knowledge areas within the different competence elements are concretised.

The present Exam Preparation book contains a summary of the theories described in this book, as well as many multiple-choice and open questions with sample answers and rationale.

Includes more than 350 multiple-choice questions and more than 250 open questions with answers and rationale!

PURPOSE

IPMA realises that no single book can contain a complete range of questions to cover all relevant knowledge areas related to all competence elements for managing all types of projects. Moreover, the exam topics and the level of mastery required for different accreditation levels may slightly differ within the various regions.

Therefore, this book aims not to offer a complete set of questions covering all knowledge areas at all competence levels but to provide a comprehensive understanding of the types of questions and complexity that can be examined without being exhaustive.

AUDIENCES AND USES

This book can be used by those who want to prepare for one of the IPMA exams. However, it can also be used during training to examine whether one understands and can apply the knowledge areas sufficiently.

Trainers and educators can use this exam preparation book as training material and a reference for training. The individual IPMA Member Associates can use the questions in this book as a reference when developing their exams.

CERTIFICATION SCHEME

The four levels of individual certification and their titles are described on the IPMA World website (<https://ipma.world>).

Level D: Project Management Associate – This level requires the candidate to know all competence elements related to project management. As such, they possess broad project management knowledge and can work in a project team. No previous experience is required.

Level C: Project Manager – This level requires candidates to have at least three years of experience within the last six years as a project manager in projects of moderate complexity or a responsible project management role assisting the project manager in complex projects.

Level B: Senior Project Manager – This level requires candidates to have at least five years of experience as a project manager, managing moderately complex projects within the last eight years, with at least three years in a responsible leadership role managing complex projects.

Level A: Projects Director – This level requires candidates to have at least five years of experience as a project manager in a responsible leadership role, managing complex projects within the last twelve years, with at least three years at a strategic level.

TAXONOMY

The required mastery levels can be related to Bloom's taxonomy. In this way, learning objectives can be examined at different difficulty levels. Three composite levels are distinguished in the present exam preparation book (see Table 1.01):

- » Comprehension (c): Remembering and understanding specific concepts;
- » Application (p): Being able to apply knowledge, models and concepts;
- » Analysis (a): Being able to analyse and evaluate specific issues.

All open questions in this book are marked accordingly.

| c = Comprehension | | p = Application | | a = Analysis | |
|-------------------|---------------|-----------------|--------------|--------------|-------------|
| Verbs | Nouns | Verbs | Nouns | Verbs | Nouns |
| Recognise | Terms | Apply | Situations | Analyse | Analysis |
| Name | Facts | Draw up | Applications | Derive | Models |
| Compare | Processes | Implement | Principles | Assess | Problems |
| Describe | Relationships | Calculate | Criteria | Design | Conclusions |
| Define | Standards | Define | Rules | Prioritise | Predictions |
| Explain | Rules | Choose | Methods | Relate | Comment(s) |
| Reproduce | Criteria | (Re)solve | Conclusions | Conclude | Concepts |
| Illustrate | Methods | Derive | | Consider | |

Table 1.01 Taxonomy levels applied

SIGNING UP FOR THE EXAM

Candidates should apply to their own Member Association for the exam. Each Member Association defines the learning objectives and the required level of mastery for each learning objective for the different accreditation levels in their region.

2. STRUCTURE OF THE BOOK

The IPMA curriculum comprises 28 competence elements for project management, which are divided into (see Table 2.01):

- » 13 Practices competences
- » 10 People competences
- » 05 Perspective competences

| Perspective competences | | People competences | | Practice competences | |
|-------------------------|---------------------------------------|--------------------|-------------------------------------|----------------------|---|
| 4.3.1 | Strategy | 4.4.1 | Self-reflection and self-management | 4.5.1 | Design |
| 4.3.2 | Governance, Structures and processes | 4.4.2 | Personal integrity and reliability | 4.5.2 | Requirements, objectives and benefits |
| 4.3.3 | Compliance, standards and regulations | 4.4.3 | Personal communication | 4.5.3 | Scope |
| 4.3.4 | Power and Interest | 4.4.4 | Relationships and engagement | 4.5.4 | Time |
| 4.3.5 | Culture and values | 4.4.5 | Leadership | 4.5.5 | Organisation and information management |
| | | 4.4.6 | Teamwork | 4.5.6 | Quality |
| | | 4.4.7 | Conflict and crisis | 4.5.7 | Finance |
| | | 4.4.8 | Resourcefulness | 4.5.8 | Resources |
| | | 4.4.9 | Negotiation | 4.5.9 | Contracts and procurement |
| | | 4.4.10 | Result orientation | 4.5.10 | Plan and control |
| | | | | 4.5.11 | Risk and opportunities |
| | | | | 4.5.12 | Stakeholders |
| | | | | 4.5.13 | Change and transformation |

Table 2.01 ICB4 competence elements

Perspective competences define the contextual competences needed to navigate projects within and across the broader environment. The People competences define the personal and interpersonal competences required to succeed in projects. The Practice competences define the technical aspects of managing projects.

ORDER OF THE BOOK

To meet readers' needs, *Project Management by ICB4* begins with an introduction to projects and project management (part 3). Next, the practice competences are described (parts 4, 5 and 6), then the people competences (parts 7 and 8), and finally the perspective competences (parts 9, 10 and 11). All parts are divided into chapters to match the different competence elements. The practice competence elements are described in the sequence of the project lifecycle. This exam preparation book follows *Project Management by ICB4* format.

The table of contents of this book comprises the following content parts:

3. Project orientation
4. Project preparation stage
5. Project definition stage
6. Project delivery and close-out
7. Self-management
8. In connection with others
9. Implementing change
10. Internal context
11. External context

The appendix includes a list of acronyms, literature references, and an index.

STRUCTURE OF THE CHAPTERS

All chapters contain the purpose, the relevant key competence indicators in ICB4, and a summary of the learning objectives from *Project Management by ICB4*. This is followed by multiple-choice and open-ended questions and sample answers.

KEY COMPETENCE INDICATORS (KCIs)

The KCIs provide the definitive indicators of successful project management. The applicable KCIs are listed for each chapter, and a brief explanation of their relevance and connection to the learning objectives is provided. The numbering corresponds to the competence elements in Table 2.01. Some KCIs apply to several chapters. In those cases, the key competence measures are indicated. For a complete overview of all KCIs, see the *Individual Competence Baseline ICB4*.

LEARNING OBJECTIVES

The learning objectives contain the knowledge and skills required to master the competence elements. The learning objectives in the exam preparation correspond to the learning objectives in *Project Management by ICB4*.

In *Project Management by ICB4*, most chapters are further divided into a *Basic* and an *Advanced* section. The Basic section describes the core learning objectives. The *Advanced* section describes additional learning objectives. The latter are more suitable for the advanced levels of certification. The learning objectives in this exam preparation are classified accordingly.

MULTIPLE-CHOICE QUESTIONS

The multiple-choice questions always contain four options with one correct answer. For the other options, an explanation is given for why it is not the correct answer. In the actual exam, the multiple-choice questions count for 1 point each.

When answering the multiple-choice questions, look for the best option, not the perfect one. The multiple-choice questions are designed specifically for the Basic learning objectives and are all set at the comprehension level of the taxonomy.

OPEN QUESTIONS

The open questions address key learning objectives for both the Basic and Advanced sections. Most of the open questions are based on a short case.

In the heading, it is indicated whether the question is a *Basic* (B) or *Advanced* (A) learning objective and the taxonomy level (comprehension (c), application (p), or analysis (a)). Further, a potential score is given for each question. The answer model indicates how these scores are assigned.

For some questions, the categories to which candidates should give their answers are provided. For other questions, it is assumed that the candidate knows these categories. This aligns with how exam questions will be formulated in practice. In many cases, not all possibilities are thoroughly examined, resulting in an answer model that tends to be broader or more comprehensive than what is asked. Candidates may formulate answers differently from those given in the answer model.

USING THE BOOK

A conscious decision was made to start each chapter with a short summary of the learning objectives of the relevant competence element. This gives direction and focus regarding the questions. However, this description is insufficient to answer all the questions. One should refer to the textbook *Project Management by ICB4* and the training for that.

PRACTICE COMPETENCES

PART 3 PROJECT ORIENTATION

PART 4 PROJECT PREPARATION

PART 5 PROJECT DEFINITION

PART 6 PROJECT DELIVERY AND CLOSE-OUT

3. PROJECT MANAGEMENT

INTRODUCTION

The purpose of this chapter is to enable the individual to determine whether an initiative can best be carried out as a project and apply the principles of project management.

This chapter explains what a project is, why it is sometimes better to work on a project basis and sometimes not, what the characteristics and necessary conditions of a project are, and why working on a project is so different from business as usual.

KEY COMPETENCE INDICATORS

4.3.2.1 Know the principles of project management and the way in which they are implemented.

Project-based working requires a good understanding of what projects are, why they should be carried out, their conditions and characteristics, and how they can be positioned in both the product lifecycle and the permanent organisation. For continuous improvement, the IPMA *Project Excellence Model* can be applied.

LEARNING OBJECTIVES

» What is a project, and what is project management

A project is a unique, temporary, multidisciplinary, and organised endeavour to realise agreed deliverables within predefined requirements and constraints. Project management consists of all managerial tasks necessary to deliver the project deliverables successfully. This involves planning, organising, monitoring, and controlling all aspects of the project, leading the team, and motivating all people involved.

» Reasons to initiate a project

Reasons to initiate a project are most often that the result is a one-off within a given context; multidisciplinary teams need to be involved; the result cannot be specified in detail in advance; many stakeholders need to be involved in the decision-making; the realisation transcends the individual domains; much management attention is required; and the work does not fit within 'business as usual'.

» Prerequisites for and characteristics of a project

The necessary conditions for the existence of a project are that there is a goal and intended output, a defined beginning and end, a temporary organisation, and a predefined scope and conditions, but also the decision to carry out the endeavour as a project and the agreement between the project sponsor and the project manager to start.

» The different work forms

There are three primary work forms for carrying out a task: improvisation, plan-based work, and routine work.

» Project lifecycle

A project consists of at least two stages: the definition and the delivery stage. The project preparation stage falls before the project starts and initiates the actual start.

» Staging, phasing, controlling and decision-making within projects

A project stage is a period within a project, separated from other periods, with a predetermined output, and concluded with a go/no-go decision. A project phase is a period within a project with its own characteristics and a predetermined output. Project phases can overlap, but project stages do not. Controlling includes the subsequent steps: Plan, Do, Check, Act.

» Control aspects in a project

Traditional control aspects are time, costs, quality, scope, risks, benefits, and currently, at least, also sustainability.

» Magic triangle and the iron square

The magic triangle is the project management concept that time, cost, and scope are interrelated, and any change to one constraint will inevitably affect one or both of the other constraints. In the iron square, quality is distinguished separately.

» Projects within the product lifecycle

The feasibility study, realisation, major upgrade or repair, and decommissioning are four product lifecycle stages commonly carried out through projects.

» Project at different levels

Projects can be carried out at different levels. A project for one organisation may only be a sub-project or work package within a project for another organisation.

» Project output, outcome, benefits, and goals

The project output is the total of the project deliverables that comprise the project result. The project outcome is the result of the change enabled by the project output. Project benefits are the advantages that result from the project outcome. The project goal is the overarching purpose of the project.

» Agile versus Waterfall approach

In a Waterfall approach, the output is developed linearly and is entirely put into use at the end of the project. Agile is a conceptual approach to implement changes iteratively and incrementally. Projects can consist of a combination of Agile and Waterfall approaches, so-called hybrid approaches.

» Sustainability and projects

Sustainability is one of the most significant challenges of our time. Sustainable development is the development that meets the present needs without compromising the ability of future generations to meet their own needs.

» IPMA Project Excellence Baseline (advanced)

The *IPMA Project Excellence Baseline* provides guidelines for assessing a project or programme. Excellence in this context refers to achieving outstanding results in project or programme management by demonstrating high levels of competence, effectiveness, and efficiency throughout the project or programme lifecycle. Excellence is a quality that surpasses ordinary standards. The three key areas of the model are People & Purpose, Processes & Resources, and Project Results. Each area consists of a number of criteria on which the project or programme is assessed.

3. MULTIPLE-CHOICE QUESTIONS

1. What is a project?
 - a. A temporary organisation created to deliver one or more business products according to an agreed business case.
 - b. A unique set of processes consisting of coordinated and controlled activities with start and finish dates in order to realise intended benefits and goals.
 - c. A unique, temporary, multidisciplinary and organised endeavour to realise agreed deliverables within predefined requirements.
 - d. A process aimed at achieving concrete results.
2. What is included in project management?
 - a. The development of the project output.
 - b. Realising the benefits.
 - c. The design of the project product.
 - d. Monitoring and controlling the work.
3. What best describes the general purpose of project management?
 - a. Eliminate the existing risks.
 - b. Ensure that the output is realised according to the original specifications.
 - c. Ensure that the original budget is not exceeded.
 - d. Successfully deliver the project deliverables.
4. What is a reason to initiate a project?
 - a. Much management attention is needed.
 - b. Several disciplines are needed to realise the output.
 - c. The result is a one-off within a given context.
 - d. The work is complex.
5. Which statement about projects is correct?
 - a. Projects are always part of a programme.
 - b. Projects can be initiated at every level of the organisation.
 - c. All projects are part of a portfolio.
 - d. Projects are stand-alone.
6. What are necessary conditions to start a project?
 - a. An approved business case, a temporary organisation.
 - b. An agreement on what to deliver, a defined budget.
 - c. Defined conditions, the output is urgently needed.
 - d. An agreement on what to deliver, a defined start and finish.
7. What is NOT a necessary condition to start a project?
 - a. There needs to be a temporary organisation.
 - b. It is temporary, with a clear start and finish.
 - c. There is a fixed budget.
 - d. There is an intended goal.

8. What is a characteristic of a project?
 - a. It is recurring.
 - b. There is a purpose and intended output.
 - c. Fixed procedures and a fixed way of operations.
 - d. Several departments are involved.

9. What is a characteristic of improvisation?
 - a. Think first, act later.
 - b. Focus on efficiency.
 - c. A clear start and finish.
 - d. Strongly demand-driven.

10. What is a characteristic of routine work?
 - a. Results-orientated.
 - b. The work is carried out ad-hoc.
 - c. Focus on effectiveness.
 - d. Work-orientated.

11. What is a characteristic of plan-based work?
 - a. A fixed method of delivery.
 - b. Think first, than act.
 - c. A customer-supplier relation.
 - d. Flexibility.

12. Project stages are ...
 - a. Project definition and delivery.
 - b. Project preparation and definition.
 - c. Project delivery and post-project support.
 - d. Project delivery and closure.

13. Which statement about staging, controlling and decision-making is correct?
 - a. Controlling is monitoring the progress of the work.
 - b. Decision-making is determining whether to continue the project or not.
 - c. Staging is splitting up the project into periods with the same type of activities.
 - d. Staging supports management and decision-making in projects.

14. Primary control aspects in a project include ...
 - a. Time, quality, information.
 - b. Quality, scope, organisation.
 - c. Risks, quality, time.
 - d. Organisation, information, quality.

15. Which statement about control aspects is correct?
 - a. In a magic triangle, time, quality and scope are interrelated.
 - b. The magic triangle and the iron square are based on a spacious project plan.
 - c. Time, money, scope and approach are interrelated in an iron square.
 - d. The magic triangle represents the concept that changes in one of the factors may impact the others.

16. Which stages in the product lifecycle are usually suitable for project-based work?
 - a. Regular maintenance, product development.
 - b. Feasibility study, major upgrade.
 - c. Use of the product, product realisation.
 - d. Regular maintenance, demolition of the product.

17. Which statement about projects is correct?
 - a. By definition, projects are defined between a customer and an external supplier.
 - b. A work package can be a project in itself.
 - c. Within any assignment, there is only one project at a time.
 - d. Sub-projects each consist of only one delivery stage.

18. Which of the following statements is correct?
 - a. The project team delivers the project outcome to the customer.
 - b. Each project has to realise the benefits agreed upon.
 - c. The project outcome results from the change enabled by the project output.
 - d. The project goals are the targets within which the project output is to be delivered.

19. Which statement about Agile in projects is correct?
 - a. Agile is a conceptual approach to implementing changes iteratively and incrementally.
 - b. Iterative means that the project output is delivered in a series of small steps.
 - c. IT-driven projects can be delivered Agile, other projects are delivered waterfall.
 - d. Incremental means that the project output is developed cyclically.

20. Which statement about the project approach is correct?
 - a. Waterfall is a conceptual approach where output is delivered incrementally.
 - b. IT projects can always be delivered Agile.
 - c. Waterfall and Agile approaches can often be combined within projects.
 - d. Agile projects are carried out in continuous development.

21. Which statement about sustainability in projects is correct?
 - a. Sustainability in projects is about the ecological impact of the project.
 - b. Sustainability in projects is about the sustainable impact throughout the project lifecycle.
 - c. The project manager is accountable for the sustainability in the project.
 - d. Sustainability in projects should encompass the entire product lifecycle.

3. OPEN QUESTIONS

3.01 PROJECT CONDITIONS (2 POINTS) BP

The Director is not receiving adequate reports. The information is outdated and incomplete, and he has to wait days for more details. He asks Peter, one of his employees, to work out a proposal on how to improve this. He expects it to be on his desk by next week. Peter starts right away.

- » Is this a project? Explain your answer.

3.02 WORK FORMS (2 POINTS) BC

- » Indicate the work forms where the characteristics fit best.

| Characteristics | Improvisation | Plan-based work | Routine work |
|-------------------------------|---------------|-----------------|--------------|
| 1. Risks are clear in advance | | | |
| 2. Effective | | | |
| 3. Flexible | | | |
| 4. Multidisciplinary | | | |
| 5. Approach is not determined | | | |
| 6. Efficient | | | |
| 7. Output is clear | | | |
| 8. Highly demand-driven | | | |

3.03 STAGING, CONTROLLING, DECISION MAKING (2 POINTS) BC

- » Define 2 advantages and disadvantages of staging a project and explain your answer.

3.04 MAGIC TRIANGLE AND IRON SQUARE (2 POINTS) BP

A new house needs to be built. The project is under severe pressure. The budget is tight, and the work has to be completed before the end of the year. The management now wants the house to meet even stricter requirements. You clarify that this is impossible without adjusting the assignment.

You can use two concepts: the magic triangle or the iron square.

- » Which of these concepts can best be used to support your argument? Explain your answer.

3.05 PROJECTS WITHIN THE PRODUCT LIFECYCLE (2 POINTS) BC

During the product lifecycle, projects can be carried out on several occasions.

- » Indicate 4 stages in the product lifecycle commonly carried out through projects. Explain your answer.

3.06 PROJECT CONDITIONS (2 POINTS) BA

The organisation has expanded rapidly in recent years. The current office space is insufficient. You have been asked to lead the project to solve this problem.

» Is this issue suitable to be solved in a single project? Explain your answer.

3.07 PROJECT EXCELLENCE BASELINE (2 POINTS) AP

The IPMA *Project Excellence Baseline* (PEB) provides guidelines for assessing a project or programme. Excellence is the extent to which a set of features and characteristics of a product, service or process satisfy stated or implied needs. Excellence is a quality that should be secured right at the beginning of a project or programme.

- a. Provide 2 comments on the above text. (1 point)
- b. What is the core element of the IPMA PEB?. (1 point)

3. MULTIPLE-CHOICE QUESTIONS - ANSWERS

1.
 - a. Incorrect: An agreed business case is not mandatory to be a project.
 - b. Incorrect: A project does not in itself realise benefits and goals. The customer organisation does.
 - c. Correct.
 - d. Incorrect: The attribute that a project is temporary is missing.
2.
 - a. Incorrect: Developing the project output is part of the specialist's work.
 - b. Incorrect: Benefits are realised based on the project deliverables but are not part of project management.
 - c. Incorrect: The design of the project product is part of the specialist work.
 - d. Correct.
3.
 - a. Incorrect: Risks need to be managed. Risks cannot all be eliminated.
 - b. Incorrect: Specifications should be controlled and not frozen.
 - c. Incorrect: The budget should be controlled and not frozen.
 - d. Correct.
4.
 - a. Incorrect: That in itself is not a reason to initiate a project.
 - b. Incorrect: That in itself is not a reason to initiate a project.
 - c. Correct.
 - d. Incorrect: Complexity in itself is not a reason to initiate a project.
5.
 - a. Incorrect: Projects can also be stand-alone.
 - b. Correct.
 - c. Incorrect: Projects can also be initiated outside the portfolio.
 - d. Incorrect: Projects can be part of a programme.
6.
 - a. Incorrect: An approved business case is not a necessary condition.
 - b. Incorrect: The final budget can also be determined during the project.
 - c. Incorrect: Urgency is not a necessary condition for a project to exist.
 - d. Correct.
7.
 - a. Incorrect: This is a necessary condition for a project.
 - b. Incorrect: This is a necessary condition for a project.
 - c. Correct: The final budget can also be determined during the project.
 - d. Incorrect: This is a necessary condition for a project.
8.
 - a. Incorrect: A project is a unique endeavour.
 - b. Correct.
 - c. Incorrect: In projects, ways of working are adapted to circumstances.
 - d. Incorrect: That may be, but not always.
9.
 - a. Incorrect: This is a characteristic of plan-based work.
 - b. Incorrect: This is a characteristic of routine work.
 - c. Incorrect: This is a characteristic of project-based work.
 - d. Correct.

10.
 - a. Incorrect: This is a characteristic of plan-based work.
 - b. Incorrect: This is a characteristic of improvisation.
 - c. Incorrect: This is a characteristic of plan-based work.
 - d. Correct.

11.
 - a. Incorrect: This is typically a characteristic of routine work.
 - b. Correct.
 - c. Incorrect: This is typically a characteristic of project-based work.
 - d. Incorrect: This is typically a characteristic of improvisation.

12.
 - a. Correct.
 - b. Incorrect: Project preparation does not belong to the project lifecycle itself.
 - c. Incorrect: Post-project support does not belong to the project lifecycle itself.
 - d. Incorrect: Project closure is a process at the end of the project delivery stage but not a separate stage in itself.

13.
 - a. Incorrect: Control also includes taking the necessary corrective measures to ensure the work is delivered according to plan.
 - b. Incorrect: Decisions are made throughout the project's life and at many levels in the project.
 - c. Incorrect: That is phasing. A stage is a period within a project, separated from other periods, with a predefined output and concluded with a go/no-go decision.
 - d. Correct.

14.
 - a. Incorrect: Information is a control aspect, but not directly also a project objective.
 - b. Incorrect: Organisation is a control aspect but not directly also a project objective.
 - c. Correct.
 - d. Incorrect: Organisation and information are control aspects but not directly also a project objective.

15.
 - a. Incorrect: The magic triangle includes time, cost and scope.
 - b. Incorrect: The magic triangle and the iron square are based on an optimal plan.
 - c. Incorrect: The iron square includes time, cost, quality and scope.
 - d. Correct.

16.
 - a. Incorrect: Regular maintenance is mainly carried out routine-based.
 - b. Correct.
 - c. Incorrect: The use of the product is mainly carried out routine-based.
 - d. Incorrect: Regular maintenance is mainly carried out routine-based.

17.
 - a. Incorrect: A project can be carried out entirely within the own organisation.
 - b. Correct.
 - c. Incorrect: Within the main project, various sub-projects can be carried out simultaneously.
 - d. Incorrect: Sub-projects can also consist of different delivery stages.

18.
 - a. Incorrect: The project output is handed over to the customer.
 - b. Incorrect: Benefits should be realised by the customer based on the project output.
 - c. Correct.
 - d. Incorrect: Project goals are the broader, overarching aims of the project. They provide direction and purpose.

19. a. Correct.
b. Incorrect: That is incrementally.
c. Incorrect: Agile can be applied in any project where strong collaboration with users is required and incremental delivery is an option.
d. Incorrect: That is iteratively.
20. a. Incorrect: Waterfall is an approach in which the output is developed linearly and handed over in its entirety at the end of the project.
b. Incorrect: Delivering Agile is not always possible.
c. Correct.
d. Incorrect: Agile projects are also temporary endeavours and should be distinguished from continuous development.
21. a. Incorrect: The social impact is also at stake.
b. Incorrect: Sustainability should encompass the entire product lifecycle.
c. Incorrect: The project sponsor is accountable for it. The project manager is responsible for it.
d. Correct.

3. OPEN QUESTIONS - SAMPLE ANSWERS

3.01 PROJECT CONDITIONS (2 POINTS) BP

Sample answer:

- » No, this is an assignment within a business as usual and not a project.
 - There is no temporary organisation. Peter reports directly to his supervisor. Perhaps he has to coordinate with others, but they do not report to him.
 - They did not decide to carry out this endeavour as a project.

Score:

- » For the correct answer and the correct explanation, 1 point each. 2x1 point

3.02 WORK FORMS (2 POINTS) BC

Sample answer:

| Characteristics | Improvisation | Plan-based work | Routine work |
|-------------------------------|---------------|-----------------|--------------|
| 1. Risks are clear in advance | | | V |
| 2. Effective | | V | |
| 3. Flexible | V | | |
| 4. Multidisciplinary | | V | |
| 5. Approach is not determined | V | | |
| 6. Efficient | | | V |
| 7. Output is clear | | | V |
| 8. Highly demand-driven | V | | |

Score:

- » Per 4 correct answers, 1 point. 2x1 point

3.03 STAGING, CONTROLLING, DECISION MAKING (2 POINTS) BC

Sample answer:

- » Advantages:
 - Gives more control because the work is authorised, and the budget is released per stage.
 - Enforces reassessing the project's business case at predefined points in time.
 - Enforces working in accordance with the overall project plan and a detailed plan for the next stage (rolling wave).
 - Enforces getting official discharge about the project performance on a stage-by-stage basis.
- » Disadvantages:
 - Stage transitions cost time and money.
 - Continuity of work can be disrupted.
 - Staging limits flexibility, as decisions and activities are sometimes delayed until the stage ends.

Score:

- » For 2 correct advantages. 1 point
- » For 2 correct disadvantages 1 point

3.04 MAGIC TRIANGLE AND IRON SQUARE (2 POINTS) BP**Sample answer:**

- » Both concepts can be used too, but in this case the iron square is more appropriate.
- » Explanation: The magic triangle describes the dependency between time, cost, and scope, where quality requirements are part of the scope. The iron square describes quality as a separate factor.

Score:

- » For the correct answer and the correct explanation, 1 point each. 2x1 point

3.05 PROJECTS WITHIN THE PRODUCT LIFECYCLE (2 POINTS) BC**Sample answer:**

- » The four stages:
 - Feasibility study
 - Development/realisation
 - Major upgrade/maintenance
 - Demolition
- » Explanation: During these stages, the product undergoes a significant change, typically best done on a project basis.

Score:

- » For the correct stages and the correct explanation, 1 point each. 2x1 point

3.06 PROJECT CONDITIONS (2 POINTS) BA**Sample answer:**

- » No, it is best to solve this problem in two consecutive projects:
 - Feasibility study resulting in a report comparing the different options with a recommendation as to which option seems the most suitable;
 - Realisation project to deliver the chosen option.
- » Explanation: Since the solution to the space shortage is still unknown, an agreed deliverable cannot yet be specified.

Score:

- » Per the correct answer and explanation, 1 point. 2x1 point

3.07 PROJECT EXCELLENCE BASELINE (2 POINTS) AP**Sample answer:**

- a. Comments on the above text:
 - Excellent is a quality that surpasses ordinary standards.
 - Excellent is a continuously moving target that should constantly be pursued.
 - Achieving excellence is a long-term effort.
- b. Sustainability is the core element of the IPMA PEB.

Score:

- a. For 2 correct answers. 1 point
- b. For the correct answer. 1 point

4. PROJECT PREPARATION

The project preparation is intended to arrive at a project assignment supported by the organisation.

Chapter 4.01 – Project Preparation Stage – Describes the various actions needed to prepare a project outline and obtain authorisation from the project sponsor to carry out the project definition stage.

Chapter 4.02 – Stakeholders – Maps out the various interest groups surrounding the project and discusses how these groups can be effectively involved in the project.

Chapter 4.03 – Project Organisation – Describes how the various interest groups are included in the project organisation, which roles can be distinguished, and the tasks and responsibilities of those different roles.

Chapter 4.04 – Requirements and Objectives – Describes the project goals, results and requirements and how they are related.

Chapter 4.05 – Risk and Opportunity – Describes managing risks and opportunities. Various risk and opportunity techniques are also discussed.

Together, these chapters contain the key elements a project manager has to deal with in preparing for the project.