

Course: Software Project Management

Week 16: Final Exam

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Instruction

Before you begin the final exam, please take a moment to review these important instructions:

- ✓ Read each question carefully before answering.
- ✓ The exam includes a mix of multiple choice, short answer, and case-based questions.
- ✓ Work independently
- ✓ Manage your time wisely

Exam Structure

- Multiple Choice Questions (30 questions)
- Short Answer Questions (5 questions)
- Case Analysis Questions (3 questions)
 - Time allotted: **90 minutes**
 - Total point: **100%**

Questions

Part I: Multiple Choice

Instruction: Choose the correct answer from the given alternatives (2 pts each)

Questions (1/30)

Which of the following is considered not project in project management?

- A. A training that will be delivered for employees
- B. Conducting a feasibility study for a new software
- C. Developing a software application
- D. Processing monthly payroll for employee

Question (2/30)

What is the primary purpose of the SPMP in software development?

- A. To describe the software architecture in detail
- B. To manage project timelines and track progress
- C. To ensure compliance with legal regulations
- D. To outline project risk management strategies

Questions (3/30)

Which of the following principles is crucial for the success of any project, including software projects?

- A. Delivering the product as soon as possible, regardless of quality
- B. Understanding and managing stakeholder expectations
- C. Ignoring scope changes to maintain original plans
- D. Focusing solely on technical aspects, ignoring team dynamics

Questions (4/30)

What is the primary cause of project failure in software development?

- A. Lack of testing
- B. Inadequate documentation
- C. Poor requirement analysis
- D. Limited stakeholder engagement

Questions (5/30)

How does managing a software project differ from managing other projects.

- A. Software projects require fewer resources, so flexibility is unnecessary
- B. Software projects have a fixed scope and cannot accommodate changes
- C. Software projects are completely inflexible once planning begins
- D. Software projects are more flexible, allowing frequent changes to requirements & scope

Questions (6/30)

Why is stepwise planning essential in software development?

- A. It eliminates the need for stakeholder feedback
- B. It ensures the project scope remains fixed
- C. It breaks down planning into manageable steps
- D. It prevents any project risks

Questions (7/30)

In which phase of the project management project manager is assigned?

A. Planning

C. Initiation

B. Execution

D. Monitoring & Controlling

Questions (8/30)

What is the first step in a stepwise project planning approach?

- A. Defining risk mitigation strategies
- B. Identifying project scope
- C. Estimating project cost
- D. Assigning resources

Questions (9/30)

You are developing an Online Learning System for AASTU to support remote education. The project has 8 months' timeline and a 12,000,000 USD budget. If the project timeline changes and you need to develop the software faster, what are your options?

- A. The time constraint changing will have no impact on the budget or scope
- B. It increases the budget or decrease the quality
- C. It decreases the budget or increase the quality
- D. There is no possible option to develop faster

Questions (10/30)

Software Engineering department has initiated a project to assess the feasibility of inter department communication system in AASTU from a technical, economic, legal and organizational point of view. The project charter created by the project manager on behalf of the university is now approved. Which of the following processes should be performed next?

- A. Develop Project Management Plan
- B. Identify Stakeholders
- C. Identify Risks
- D. Develop Project Charter

Questions (11/30)

You are managing a software development project that consists of five sequential modules, with each module representing a distinct phase of the project. Each phase must be completed and approved before the next one begins. The first module (Module A) has just been successfully completed and closed. After the first module of the project is complete, which process group should follow for module B?

- A. Initiating
- B. Executing
- C. Planning
- D. Closing

Questions (12/30)

Identify the activity that does not fall under the core responsibilities of software project management:

- A. Project planning
- B. Software coding

- C. Risk management
- D. Resource allocation

Questions (13/30)

What is the main role of the project manager when using the triple constraint triangle?

- A. Make sure that there are no changes to the triple constraint triangle
- B. Communicate changes to the triple constraint triangle to stakeholders
- C. Limit changes to only one side of the triple constraint triangle
- D. Ensure that the triple constraint triangle stays in balance

Questions (14/30)

According to the RACI matrix, which role is aligned to carrying out the work required to achieve the task?

- A. Responsible
- B. Accountable

- C. Consulted
- D. Informed

Questions (15/30)

Which term describes an unresolved decision, situation, or problem that will significantly impact a project?

A. Risk

C. Issue

B. Challenge

D. Threat

Questions (16/30)

Assume, not all team members are properly checking out resources used in the project. What is the best option for the project manager?

- A. Wait until there is a need or the team is impacted
- B. Escalate the issue to the functional managers
- C. Discuss the checkout rationale with the team
- D. Remove the process of checking out resources

Questions (17/30)

You are about to start planning for a large and complex project. Due to the size of the project along with the regulatory and environmental considerations, the development of a detailed project management plan will be critical. As a starting point for initial project planning, what is the first thing you should do?

- A. Conduct a project kick-off meeting to inform and engage stakeholders and gain commitment
- B. Review the project charter to understand the high-level information about the project
- C. Begin the process of identifying stakeholders so they can be engaged as necessary for project planning
- D. Share the project scope statement with the project team for a common understanding of project deliverables

Questions (18/30)

A team member submits a draft of the requirements management plan to the project manager for a review. The project manager notices that one of the components included in the plan does not belong there. Which of the following components did the project manager most likely notice?

- A. A process that describes how the project requirements will be prioritized
- B. The metrics that will be used and the rationale for using them
- C. A process that specifies how a project scope statement will be prepared
- D. How requirement activities will be planned, tracked, and reported

Questions (19/30)

What is the main way in which the WBS can be used when planning?

- A. It guides the process of activity identification and sequencing
- B. It provides detailed and comprehensive budget information
- C. It graphically illustrates the start and end dates for activities
- D. It shows the hierarchy of the direct work for completing a project

Questions (20/30)

A software project was initially estimated to be completed in 12 months with a budget of \$1 million. Due to unforeseen technical challenges and scope changes, the project was completed in 20 months with a final cost of \$1.8 million. The delivered system met all functional and non-functional requirements and was successfully deployed and adopted by users. Based on this situation, how should the project be categorized?

- A. A completely failed project because it exceeded the budget and timeline
- B. A successful project because it met all requirements and was adopted
- C. A challenged project because it exceeded time and cost but delivered value
- D. A failed project because exceeding the budget means financial loss

Questions (21/30)

What is the main purpose of ensuring that software project planning and implementation is iterative?

- A. To ensure that the implementation plan divides the direct work involved in the project in to manageable packages
- B. To ensure that the implementation plan is treated as a living document that can evolve and change over time
- C. To ensure that the implementation plan includes and details all the work that was specified in the project proposal
- D. To ensure that elements that were absent or underemphasized in the project proposal have been included in the implementation plan.

Questions (22/30)

A bank developed a new online banking system with enhanced security features. The project was completed on time and within budget. However, after deployment, regulators identified non-compliance with financial security standards, leading to the system's suspension and a legal penalty. How should this project be categorized?

- A. A successful project because it met the original budget and timeline
- B. A challenged project because it was deployed but faced regulatory issues
- C. A failed project because it was suspended due to legal non-compliance
- D. A partially successful project because it was completed before suspension

Questions (23/30)

. Which project management tool is specifically designed for Agile software development teams to manage sprints, track issues, and support Scrum or Kanban workflows?

A. Microsoft Project

C. Trello

B. Jira

D. Asana

Questions (24/30)

A startup launched a project to build a mobile app in six months with a \$500,000 budget. The team started development immediately without a detailed SPMP, assuming requirements would remain stable. However, midway through the project, the client changed requirements multiple times, causing delays and cost overruns. After 12 months and a \$900,000 expense, the project was canceled. What was the primary reason for the project's failure?

- A. Technical issues in app development
- B. Poor planning and lack of a structured SPMP
- C. Insufficient budget allocation from the start
- D. Inefficiency of the development team

Questions (25/30)

What is the main purpose of a Gantt chart in project management?

- A. Identify the minimum time required to complete project activities
- B. Planning and documenting software test cases
- C. Visualizing project timelines and task dependencies
- D. Defines and describes project activities in a decomposed hierarchy.

Questions (26/30)

A logistics company initiated a software project with a stepwise plan. However, after requirements were approved, unexpected business process changes required system modifications. Since no structured change management was included in the SPMP, modifications caused delays and budget overruns. What was the key missing step in the stepwise planning approach?

- A. Risk assessment and change management planning
- B. Adding unnecessary features to meet user expectations
- C. Optimizing the user interface for mobile applications
- D. Conducting daily team meetings to check progress

Questions (27/30)

While reviewing your project's performance, you discover a significant variance. If the issue is not fixed before the next customer inspection, your project might be canceled. However, after a further review conducted by the project team, you are glad to hear that bringing the project back on track requires only a minor correction to a configuration element. What should you do first?

- A. Implement the corrective action
- B. Consult the project sponsor
- C. Submit a change request
- D. Delay the customer inspection

Questions (28/30)

A project manager does most of her communicating with team members, internal project stakeholders, and external project stakeholders via email. The project manager incorporates specific techniques when composing her emails to reduce any misunderstandings. Which of the following is not considered one of these techniques?

- A. Concise expression
- B. Clear purpose directed to the needs of the reader
- C. Controlled flow of words and ideas
- D. Communications register

Questions (29/30)

As the project manager, you are leading a brainstorming session with key stakeholders to identify project risks. Once the project risks are determined, you immediately proceed to nominate different team members as risk owners and assign them the task of developing individual risk response plans. Have you properly conducted risk management planning?

- A. No, you should be the one developing the risk response plans as you are ultimately responsible for the outcomes of the project.
- B. Yes, the risk response plans are an output of the Identify Risks process and should be developed right after the risks have been identified.
- C. No, before assigning risk responsibility to team members, you need to assess each risk's probability of occurrence and its impact.
- D. Yes, the team members should be assigned responsibility for a risk as soon as possible and tasked with creating a risk response plan.

Questions (30/30)

A project manager meets with a customer for initial discussions about an upcoming project. At the end of the meeting, the customer asks the project manager for a rough estimate of the project duration. Based on her experience with three similar projects, the project manager provides an estimate of 8-10 months. What estimation technique does the project manager use?

- A. Expert judgment
- B. Analogous estimating
- C. Three-point estimating
- D. Bottom-up estimating

Questions

Part II: Short Answer

Instruction: Give short answer for the following questions (3 pts each).

Questions (1-5/5)

1. How project is different from operation?
2. What is the lowest level of WBS in software project management?
3. Define software project planning.
4. Describe the roles of project closure for its success.
5. What is the difference between quality assurance and quality control in software quality management?

Questions

Part III: Case Analysis

Instruction: Analyze the following case scenario and provide your answer.

Questions (1/3)

Assume, AASTU is developing an Online Learning System to enhance remote education. The project has strict constraints in terms of scope, time, cost, quality, resources, and risk. The university has allocated 8 months and a budget of 12,000,000 ETB for development. The system must include course management, student enrollment, video streaming, and assignment submission features. The project team consists of 5 developers, 1 UI/UX designer, 1 QA tester and 1 project manager.

During the development phase: the university requests an additional real time chat and AI tutor feature without extending the deadline or budget. Unexpected server downtime causes a 2-week delay in deployment. Initial testing reveals poor video streaming quality, requiring rework. Identify the tradeoffs for each development issues mentioned and describe how the added features; the project delay and quality be handled by maintaining the constraints **(5pts)**

Questions (2/3)

The Department of Software Engineering at AASTU is initiating the development of an Online Learning Management System (OLMS) to enhance digital learning experiences. The system will include features like user authentication, course management, grading, video streaming, and discussion forums.

Based on the initial requirements, the development team estimates the total code size to be 40,000 lines of code. The project is considered to be of semi-detached type, as the team consists of developers with moderate experience and familiarity with the application domain. You are assigned as a project manager to use the basic COCOMO Model for preliminary estimation.

Questions (2/3) ... continued

Answer the following questions based on the above scenario, use ($a=3.0$, $b=1.12$, $c=2.5$, $d=0.35$) coefficient values for this semi-detached project.

- A. Estimate the total effort required to develop the OLMS. **(5 pts)**
- B. Based on your effort estimate, calculate the estimated duration (in months) to complete the project. **(5 pts)**
- C. Based on your effort and duration estimates, how many team members (on average) would be needed to complete the project? **(2.5 pts)**
- D. Assume if AASTU wants to complete the OLMS project in less time than the estimated duration, list two strategies that could be considered to meet this timeline without significantly compromising quality? **(2 pts)**

Questions (3/3)

AASTU is developing a new Student Information Management System (SIMS) to replace its outdated system. The SIMS will handle student registration, grading, fee payments, and reporting. During the project planning phase, the project team identified the following potential risks:

- ☒ **Risk A:** The development team has limited experience with the new database technology chosen for the project.
- ☒ **Risk B:** The project budget may be exceeded if unexpected hardware upgrades are required.
- ☒ **Risk C:** Key project personnel might leave before project completion.
- ☒ **Risk D:** Minor fluctuations in the availability of non-critical resources like office supplies or occasional staff absences may cause small disruptions but will not significantly affect the project timeline or deliverables.

Based on the risk analysis provided above, identify the most appropriate risk response strategy for each of the risks (A, B, C, and D) and justify your answer. (5 pts)

The End!