

60 min, ISIS-Exam

Part 1: (30 Points, only true-false-questions)

In projects organized following the so-called “staff model”, the decision-making authority for the project is transferred to the project manager.

A phase model with a rigidity structure of phases secures that regardless of the project type, all projects can perform their planning on adequate information.

Projects can be separated into four phases: project definition, project planning, project realization and controlling, and project closure. Risk management is only an aspect to be considered during the project definition phase.

In projects organized according to a balanced matrix organization, project managers have to balance between the two different line managers being responsible for the project.

There are four main scheduling methods: work package list, Gantt chart, networked Gantt chart, and Network. The networked Gantt chart provides an overview of the relationship between individual project activities in addition to their respective start and end dates.

Referencing Tuckman’s team building process, the so-called norming phase brings conflicts to the fore, which helps teams establish rules and align their work towards the shared goal of the project.

A scrum team is characterized by a self-organized team of project members. The scrum master is not hierarchically superior to project team members but facilitates team processes and adherence to scrum principles.

When the probability of the occurrence of a risk is estimated at 3%, and the potential amount of damage is calculated at 22.000 EUR, the risk cost is 660 EUR.

In risk management, all risks need to be mitigated.

Technical authority in a matrix organization refers primarily to the authority of project managers to recruit new employees for the project.

In the so-called “capacity-conform compensation” in resource planning, predecessor relationships do not need to be taken into consideration. This approach focuses on shifting, stretching, squeezing, or splitting work packages.

In small projects, work packages are not assigned to sub-tasks or sub-projects.

The critical path determines the project’s overall duration, including possible time buffers.

Compared to routine tasks, projects are more prone to risk due to the uniqueness and uncertainty connected to project tasks.

Project Managers can not mandate team development processes. Their role in such processes is mostly a facilitation of interaction and provision of necessary information.

In requirement engineering, the product requirements document defines what should be done, including the purpose it will serve.

The critical path allows to identify the succession of project tasks, for which any delay would mean that the project will not meet its planned date of completion.

Interface management approaches are best applied in situations, where conflicts emerge between different organizational entities that share a direct supervisor.

The role of a requirement engineer is to mediate between relevant stakeholders of a project.

Operative projects differ from strategic or innovative projects in terms of addressing often well-structured and well-defined problems.

Project planning has two goals: it builds the foundation for controlling and secures the effectiveness of the project.

Teams exhibiting a strong team cohesion stand a greater chance to experience a good collaboration quality.

Project management practice understands the “just do it”-approach as an approach, where projects are established based on an official mandate.

Identifying work packages for the work-breakdown-structure (project structure plan) requires to break down all tasks into sub-tasks until no further separation of tasks is possible.

Once a project is completed, the project staff are always re-integrated as specialists into the line organization.

Line managers in a matrix organization of projects often hold the disciplinary authority to recruit new employees for the project.

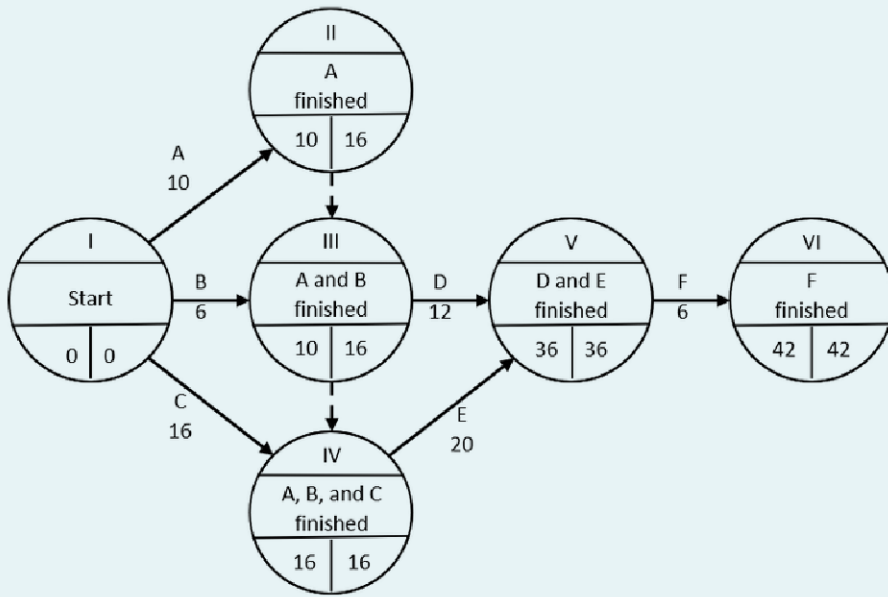
When determining whether to apply an agile or waterfall approach, the culture within the project needs to be considered. If project teams' culture thrives on chaos, a waterfall approach providing structure and reducing chaos should always be applied.

Projects that are managed based on an agile project management model are characterized through their well-defined project target informing the time and cost of the project.

When conducting a stakeholder analysis, the attitude of a stakeholder towards the project and their power related to the project need to be systematically assessed.

Goals in project management should be formulated based on the SMART principle, meaning that projects should be “**S**imple, **M**easurable, **A**utonomous, **R**eady for Application, and **T**imely”.

2. Part (each task 10 Points, list with answers to be chosen)



Use the network depicted above to answer the following questions:

In this deterministic network, the time of each activity is known and certain. (2 points)

Which activities form the critical path? (2 points)

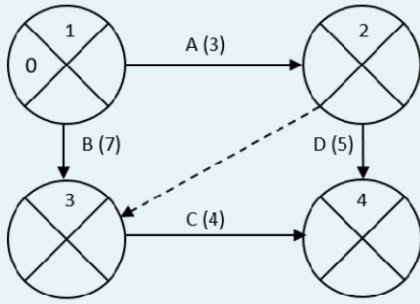
#	Activity	Predecessor	Duration [days]				σ^2
			t_o	t_M	t_p	t_F	
1	A	-	8	10	12	10	0.4
2	B	-	5	6	7	6	0.1
3	C	-	13	15	23	16	2.7
4	D	1; 2	10	12	14	12	0.4
5	E	1; 2; 3	11	20	29	20	9
6	F	4; 5	6	6	6	6	0

Use the network and table depicted above to answer the following question:

What is the variance of the critical path? (2 points)

Use the table and formula depicted below to answer the following question:

What is the probability that the project will be completed within 45 days? (4 points)



Use the activity-on-arrow network depicted above to answer the following questions:

Applying such an activity-on-arrow network to agile project management allows the calculation of the desired short releases and overall project completion based on clearly defined activities. (1 point)

Which day is the latest possible start day for Activity A? (1 point)

What is the last activity to be started in this activity-on-arrow network? (1 point)

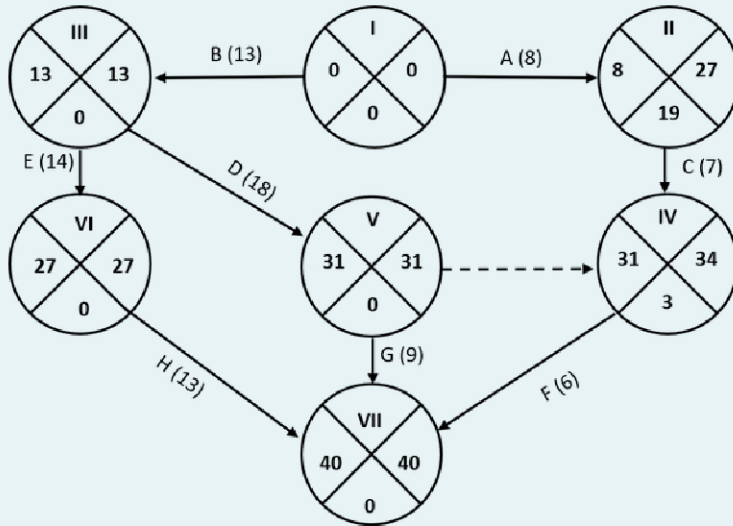
How many days does Activity A take? (1 point)

Activity C can start after 5 days. (1 point)

Which predecessor(s) does Activity A have? (1 point)

Which predecessor(s) does Activity D have? (1 point)

Which predecessor(s) does Activity C have? (1 point)



Use the activity-on-arrow network to answer the following questions:

The dummy activity between node V and IV offers redundant information and can be ignored. (2 points)

How many days does the Project at least take? (2 points)

Which Activities form the critical path? (2 points)

How many days would the project take, if Activity C takes 5 days longer? (2 points)

How long would the project last, if Activity D takes 14 days? (2 points)

How many days would the project be delayed, if Activity B takes twice as long? (2 points)