

PROFESSIONAL



APM Project Professional Qualification

Example paper

Scenario and questions based on Planning and Control

Example Question 1 – This question has three parts. Answer all parts.

Question 1a

Topic area Schedule management. Resource management.

Question A small electrical sub-station will be needed to service the needs of the leisure centre. This was not foreseen in the initial design. The costs will have to come from the 10% tolerance fund. After receiving the design estimates for the additional work, the operations team of Smith Electrical solutions Ltd have provided the table below showing the sequencing, duration in days, and labour resource needed, but they have not established an overall duration for the package of work. They have confirmed the labour resource can undertake any of the activities, but they have drawn your attention to the fact that labour will be in short supply, so they will need to minimise the numbers committed.

Taking into account the need to minimise concurrent resource usage, establish the duration of this package of work together with the number of people that will be needed to complete it using the estimates given in the table below. Provide some commentary on your response.

Marks 10 marks

Activity	Duration (days)	Labour Resource (people)	Comment
Foundations	4	4	Start Activity
Excavate Services	1	2	Start Activity
Shell	6	2	Follows Foundations
Install Services	2	2	Follows Excavate Services
Road Works	1	2	Follows Excavate Services
External Works	6	2	Follows Roadworks
Finishings	5	2	Follows Shell + Install Services
Handover	0	0	Follows Finishings + Ext Works

Question 1b

Topic area Schedule management.

Question You have learnt that the works are likely to be constructed by workers with very limited experience of this sort of sub-station. When you query whether any allowance has been made for this in the durations, you are informed that there has not.

With reference to the case scenario, explain how concerns that you may have about the workers' lack of experience might impact on scheduled activities and resource requirements.

Marks 5 marks

Question 1c

Topic area Schedule management.

Question As a result of the quality of their tender documentation and performance at interview, it is looking likely that the contract for the construction of the leisure facility will be going to Davidsons. However, you need to get a better understanding of how they intend to undertake the monitoring and control aspect of the installation. This part of the project is particularly time critical as the EU funding needs to be accessed within strict timeframes. It is currently scheduled to take 23 weeks.

What would you expect to see within a regular progress report from Davidsons Ltd. during the construction of the leisure centre and why?

Marks 10 marks

Example Question 2– This question has two parts. Answer both parts.

Question 2a

Topic area Risk, opportunity and issue management.

Question Explain how you would manage risks throughout the project lifecycle working with Tom and his team, using three risks from the case scenario as illustrative examples.

Marks 15 marks

Question 2b

Topic area Risk, opportunity and issue management.

Question During the course of the project, two events occur that threaten progress: one of the chain saws breaks down which slows progress in clearing small trees on the road work; and atrocious weather leads to flooding further down the valley adversely affecting the manufacturing systems of the supplier for some of your renewable energy systems, thus causing them to lose stock. Tom has expressed frustration at what he perceives to be your excessively bureaucratic approach to responding to these events in terms of his involvement being necessary.

Advise Tom of the relevant process or processes in this respect clarifying the different roles involved, using the two occurrences as examples.

Marks 10 marks

Question 3 – This question has three parts. Answer all parts.

Question 3a

Topic area Budgeting and cost control.

Question Tom was concerned about the potential cost for the small electrical sub-station. Smith Electrical Solutions Ltd had quoted for their services on a 'Time and Materials' basis. Each hour of labour resource was chargeable at the rate of £45.00 per hour together with fixed materials costs of £32,000, plus management fees of £250 per day during the duration of the project (from the first to last day inclusive). In addition to these costs, an appropriate contingency would be required.

Using the information provided, together with the table below, calculate a budget for the construction of the small electrical sub-station. Add whatever level of contingency you feel is appropriate in these circumstances. State any assumptions made and show your working.

Marks 10 marks

Activity	Duration (days)	Labour Resource (people)
Foundations	4	4
Excavate Services	1	2
Shell	6	2
Install Services	2	2
Road Works	1	2
External Works	6	2
Finishings	5	2

Question 3b

Topic area Budgeting and cost control.

Question Discuss two potential circumstances in which the contingency funds for the small electrical substation might be required.

Marks 5 marks

Question 3c

Topic area Budgeting and cost control.

Question How would you monitor and control the costs during the work being carried out by Smith Electrical Solutions Ltd?

Marks 10 marks

Example Question 4– This question has three parts. Answer all parts.

Question 4a

Topic area Schedule management.

Question As part of their tender submission for the leisure facility, Davidsons had submitted a simple Gantt chart as shown below. This was subsequently adopted as the baseline schedule for the work. All seven elements were to be worked on as separate, independent tasks except that Task G (Gardens/parking) could not be started before Task C (Structure) had been completed.

On 31st March, you and two senior managers from Davidsons convened to review progress. In preparation, the Davidsons foreman on site supplied the following information about actual progress:

- Site Preparation (A) and Foundations (B) were completed on time.
- Structure (C) is estimated as being 15% complete.
- Roofing (D) is 10% complete.
- No other progress has been recorded

Analyse the progress achieved (planned v. actual) on each task (on 31st March) and summarise the overall position of the project. Explain your analysis.

Marks 10 marks

Task	Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
A	Site Preparation	■							
B	Foundations		■						
C	Structure			■	■	■	■	■	
D	Roofing				■	■	■		
E	Services						■	■	
F	Decorating								■
G	Gardens/parking								■

Question 4b

Topic area Schedule management.

Question Using the analysis in 4a, determine an approximate expected completion date for the project. State any assumptions.

Marks 5 marks

Question 4c

Topic area Budgeting and cost control.

Question It is 31st May. The work on the structure of the leisure facility is now three weeks behind schedule, but the roofing task is on schedule. Explain three tactics that you could deploy to recover lost progress. State any assumptions you make.

Marks 10 marks

****END OF QUESTIONS****

Scenario

Your role

You have been engaged by Tom Pedersen, a landowner, to project manage his development of a holiday camp in his established woodland.

Tom had previously employed a local businessman to start the project but he appointed you when he realised that the project's challenges required more significant project management expertise.

You have been working with Tom to clarify the project's objectives and scope, and you have explained to him the importance of developing a Business Case and a Project Management Plan. He appreciates the significance of these documents and has agreed to work with you on their development. You have agreed with Tom a financial tolerance for the project of 10%.

Overview

Tom Pedersen is a committed environmentalist who has decided upon this project both to demonstrate the benefits of sustainable development and to bring work to the local region.

He intends to fund the project using money that he recently inherited on the death of his father, and he also hopes to draw on EU funding for which the project is eligible, although the 'window of opportunity' to access this funding is limited.

The holiday camp is to comprise a small caravan and campsite, 10 specialist eco-lodges, and extensive leisure facilities with, as a centre point, a swimming pool complex that will include a sauna and steam room. The site is currently part of a farm owned by Tom and his wife who are keen to keep their part of the farm private from the development.

All of the energy requirements on the site are to be met by renewable energy. The site is intended to be entirely 'off grid', to be carbon neutral and to use cutting edge eco-technologies. The overall design has been entered into a national competition for such new builds, and Tom hopes that this will help generate publicity to help with marketing.

To comply with Tom's ambitions for sustainability, any natural and heritage resources associated with the site will be protected. The wooded area is a mix of indigenous trees but Tom says that he doesn't think that there are any protected species. There are some Iron Age artefacts which were found by a local resident when walking. They have not been fully investigated but their locations are marked on the plans. The proposed construction work is not near to any of them.

Tom intends that the project will be completed within 18 months. He sees it as the first phase of a larger scheme, which will involve extending the number of eco-lodges after this initial project has been shown to deliver benefits.

Deliverables

The deliverables are as follows.

1. A 200m gravel roadway from the main road to the site.
2. 10 new eco-lodges, fully furnished (work can't start on the eco-lodges until the road is completed).
3. A reception and office/maintenance building which will include a small bar and shop in an existing isolated barn (which is in good condition, but requires converting) and car parking for 30 vehicles.
4. A landscaped area for camping for 120 tents.
5. A landscaped area with berths and power hook-ups for 20 caravans.
6. A central leisure facility including a 25m heated pool, sauna, steam room and changing facilities, as well as a shower block.
7. Renewable power generation and storage for the entire site.
8. Clearly signposted woodland trails for both cyclists and walkers.

Progress so far

All drawings appear to have been produced.

The road and pathways have been started by Tom's own staff. They appear to have achieved 100m of the gravel road. Whilst quality appears to be adequate, the work seems to be a little disorganised, with some of the operatives 'disappearing' for periods of time to do jobs back on the farm. The work has taken longer than planned.

Tom intends to continue to use his staff to complete the road and the pathways, and to carry out the landscaping. The second section of the roadway is going to be more challenging than the first as it is a little more meandering, having to negotiate 3 old oak trees, and it will need to include some pipework to allow small streams to run underneath. There remain a further 2000m of pathways to complete and 50 signs, initial setting out, clearing of small trees and bushes, and stripping off of the top soil.

Gravel is coming from a local limestone quarry. Signage has been agreed with a local craft centre. Both of these suppliers have a good reputation and you are confident that they will meet delivery requirements.

Two local construction contractors, Davidsons Ltd. and Bradley Construction Ltd. have been supplied with the drawings for the barn conversion and leisure facility. You understand they are close to being able to submit their tenders.

Tom is keen to employ a local firm to provide the renewable energy generation and storage. The firm is run by two innovative graduates who have been successful with two previous, small-scale installations. You have discovered that these installations are smaller than what is required for the holiday camp, but that there are no other organisations locally that might be able to undertake the work.

Progress so far cont.

A reputable electrical engineering contractor, Smith Electrical Solutions Ltd, has been engaged to supply the electrical infrastructure including the power supply to the building, power hook ups for the caravans and the link up to the renewable energy generation. The contractor's management have two main reasons for being involved in the project: firstly, work is not abundant in the region so the possibility of additional work in the second phase is appealing; and secondly, their involvement will have a marketing benefit if there is a successful outcome with the national renewables project award. The contractor is keen to work in an open, supportive and transparent way to help Tom achieve his project objectives.

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****END OF SCENARIO****

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