

WARNING

This material has been reproduced and communicated to you by or on behalf of *Charles Darwin University* in accordance with section 113P of the *Copyright Act 1968 (Act)*.

The material in this communication may be subject to copyright under the Act.
Any further reproduction or communication of this material by you may be the subject of copyright protection under the Act.

Do not remove this notice



Family Name					
Given Name/s					
Student Number					
Teaching Period	Semester 2, 2018				

PMO201 – Project Management	DURATION	
	Reading Time:	10 minutes
	Writing Time:	180 minutes
INSTRUCTIONS TO CANDIDATES		
The examination has 2 sections.		
Section A: Suggested Time:	Multiple Choice Questions: Answer ALL questions. 60 minutes	
Section B: Suggested Time:	Case Study/Short-Answer Questions: Answer ALL questions. 120 minutes	
<p>Section A must be answered on the multiple-choice answer booklet provided in this examination paper and must be handed in with your other answer booklet. Please ensure that your name and student number are clearly indicated on the booklets and at the top of this examination paper.</p> <p>Section B is to be answered in separate booklets.</p> <p>1.2 Note that questions ARE NOT of equal value. 1.3 Read ALL questions carefully.</p>		
EXAM CONDITIONS		
<u>You may begin writing from the commencement of the examination session.</u> The reading time indicated above is provided as a guide only.		
This is a CLOSED BOOK examination.		
Any non-programmable calculator is permitted.		
No handwritten notes are permitted.		
No dictionaries are permitted.		
ADDITIONAL AUTHORISED MATERIALS	EXAMINATION MATERIALS TO BE SUPPLIED	
No additional printed material is permitted	1 x 20-Page Book 1 x 4-Multiple Choice Answer Sheet 1 x Scrap Paper	

**THIS EXAMINATION IS PRINTED
DOUBLE-SIDED.**

**THIS PAGE HAS BEEN INTENTIONALLY LEFT
BLANK.**

Section B

Short-Answer Questions

Total Number of Marks for This Section: 50

This section should be answered in the Answer Booklet provided. Answer all questions.

Suggested Time Allocation for Section B: 120 minutes

Project Scenario

Park Lake Project

A Local Government Authority (LGA) covers an area which includes a coastal park and boating lake.

The number of visitors to the park has significantly declined over the last 3 years, mainly due to the boating lake being closed and a large reduction in the numbers of nesting birds and other interesting wildlife. The lake has become too shallow for recreational use and highly polluted due to a build-up of sediment over many years, washed in through regular flushing with water from the adjacent harbour and from surrounding surface water run-off. This led to the lake's closure. The consequential drop in visitors to the lake has had a negative effect on local businesses.

To help counter this, a project has been commissioned by the LGA's Chief Executive to regenerate the lake. This will involve dredging the lake bed, creating four islands and six raised reed-beds by using the dredged material retained within willow hurdles and developing new safer bird-nesting areas. In addition, a new water sports facility will be introduced as part of the project to attract more people back to the park. Another option was to completely land-fill the lake, but this was too costly.

A sustainability report was produced and approved by a previous feasibility project, also commissioned by the Chief Executive. Information in this report will be used to help with the development of the project product.

The LGA's Head of Leisure Services expects the islands to create a valuable, safe wildlife and nesting habitat for many varieties of birds. They want the raised reed-beds to help filter at least 75% of pollutants from the surrounding surface water run-off, improving the existing water quality. They have also stated that the increased depth of the lake and improved water quality must present the opportunity for a wide range of water sports activities, including sailing, windsurfing and kayaking.

The Head of Leisure Service's top priority is that visitors must be able to hire equipment and take water sports courses in a clean and safe environment. The project is also expected to improve the performance of the local economy, although some business-owners feel this may not be achieved.

The overall objective of the project is to regenerate the park lake in order to offer a balanced environment for conservation and leisure use. Due to the specialist knowledge and equipment required, the lake-related work will be outsourced to a dredging firm. However, the LGA's own building works department will construct the water sports sales lodge. Leisure companies will be invited to tender for the lease of the lake and water sports activities in order to offer and independently manage the water sports activities. The project will be managed by a Project Manager presently contracted to the LGA. The Parks Manager will be providing ultimate acceptance for and subsequently maintaining the quality of the new lake, islands and reed-beds and will be responsible for demonstrating, after the project, that the desired outcomes and expected benefits from these products have been realized.

The project is broken into the following stages:

Table 1 – Project Stages, Duration and Cost

Stage	Description	Duration	Cost
1	Initiation – set up project, create Project Initiation Documentation	4 weeks	\$5,000
2	Drain lake water, dredge lake bed, create islands, plant reed-beds	20 weeks	\$70,000
3	Refill lake, create bird nesting areas, construct water sports sales lodge	12 weeks	\$20,000
4	Create lake lease invitation to tender, obtain tender responses, select a suitable leisure company and create and sign the lake lease	8 weeks	\$5,000

The project will be complete once the lake is fully operational and a lake lease with a leisure company has been signed. This is planned to be on 30th April, in 11 months' time, after which the water sports facilities can be installed. There is +2/-3 weeks' time tolerance available for the project. The cost of the project is estimated to be \$100,000, with a tolerance of +\$15,000/- \$10,000 and is being funded by a government grant. A change budget of \$10,000 has been allocated to the project.

1. Scope Management (20 Marks)

The project involves three main areas of work. Once completed, the project product will be a regenerated park lake.

The lake needs to be drained dredged using specialist dredging equipment and then refilled. This work needs to be carried out in accordance with a lake specification which is to be written. The lake specification will be produced using information from a sustainability report that was created by a previous feasibility project. Dredging work will include the creation of islands by utilising the dredged material contained within reeds and willow hurdles. Additionally, raised reed-beds will be developed at the same time as the islands. This work will be followed by the creation of bird-nesting areas. Once this area of work is complete, the lake can be refilled.

A water sports sales lodge specification will be produced, followed by the water sports sales lodge drawings. Once produced, both of these documents will be included as part of the water sports sales lodge design, which will then be used to help with the construction of the water sports sales lodge.

An invitation to tender for the lease of the lake will be created and sent to various leisure companies. Using the tender responses submitted by the leisure companies, a suitable leisure company will be selected, after which a lake lease will be signed.

Use the information in the plan theme and project description, and create a Work Breakdown Structure.

2. Risk Management, Additional Information (15 Marks)

During Stage 2, dredging equipment will be used to dredge the lake to a maximum depth of 150 cm. Due to the geological composition of the area, layers of hard rock could be under areas of the lake bed which are to be dredged beyond a depth of 90 cm. If hard rock is encountered, specialist drilling equipment will be required to remove the rock at an additional cost of \$1,000 per day. It is estimated the removal of any rock could also delay the project by as much as one week. A risk budget of \$3,000 has been allocated to the project.

Prior to any dredging, using ultrasound equipment, the Team Manager will carry out a daily scan of each area of the lake bed to assess the likelihood of encountering hard rock. More than three consecutive results showing hard rock present at depths of less than 150 cm should be used as an advanced warning that the threat is developing, putting the project budget at risk.

The dredging Team Manager has been assigned as both the owner and the actionee for this risk and has been asked to keep the Project Manager aware of the status of the risk through weekly Reports. Any other risks identified should be raised using the procedure agreed in the Work Package.

The lake depth was originally excavated to a maximum depth of 90 cm, yet there is a requirement to dredge the lake bed to a depth of 150 cm in some areas.

Due to the geological composition of the area, layers of hard rock are very likely to be under lake bed areas that are to be dredged beyond a depth of 120 cm. Hard rock is less likely to be present between 90 and 120 cm, with none being present at 90 cm. The following risk has therefore been identified:

Due to there being layers of hard rock in the local area, there is a possibility that such rock will be encountered when dredging the lake beyond 90 cm, resulting in considerable costs to remove it and a delay to the project.

Table 2 contains a list of possible risk responses from the analysis of the risk. Table 3 contains a list of risk response types.

The following are risk responses identified in the risk register for the project.

Table 2 – Risk Response Statements

1	Dredge the lake bed to a maximum depth of 120 cm
2	Allow the dredging to commence as planned. If hard rock is encountered under the deeper dredged areas of the lake bed, instruct the Team Manager to dredge to a maximum depth of 90 cm in all areas.
3	Change the project requirements and only dredge the lake bed to its original depth of 90 cm.
4	Indemnify against the threat of encountering hard rock. If encountering hard rock cannot be avoided, to reduce the financial impact on the project, claim on the insurance and use the monies to help pay for the additional resources required to remove the rock.

Table 3 – Risk Response Types

Risk Response Types	
Negative Impact	Avoid
	Reduce
	Transfer
	Accept
Positive Impact	Enhance
	Exploit
	Accept
	Share

For each risk response in Table 2, select from Table 3 the correct response type and discuss your answers. Each selection from Table 3 can be used once, more than once, or not at all.

3. Project Initiation – Business Case, Additional Information (15 Marks)

The raised reed-beds will help filter pollutants from surrounding surface water run-off, eliminating the need to flush the lake on a regular basis. Water quality will consequently be improved, reducing the need to regularly treat the water. This will reduce the LGA's current annual lake maintenance costs by \$15,000.

The project will be creating willow hurdles to help support the islands and reed-beds, but these will biodegrade over time, so the islands and reed-beds will need to rely on the root systems that develop in order to support them long term. Until they are fully supported by the roots, occasional maintenance of the hurdles and additional planting will be required during the first 2 years following the project to reinforce the island and reed-bed perimeters. The cost of this ongoing maintenance work will be \$5,000.

Although the new water sports facility is expected to encourage many more people back to the park, the Parks Manager has stated that for health and safety reasons, areas within the park will have to be closed to the general public during the dredging and building work which will cause a further decline in visitors to the park during times of closure. As a result, local business and shop-owners have stressed that this will have a further, albeit temporary, negative impact on their revenue and profit during the project.

Answer the following question regarding the Business Case for the Park Lake project.

Each question includes only true statements about the park lake project which may be appropriate for inclusion in the Business Case.

Remember to select **2** answers to each question and discuss your answers.

1. Which **2** statements should be recorded under the **Reasons** section of the **Business Case**?
 - a. The number of visitors to the park has significantly declined over the last 3 years due to the closure of the boating lake and reduction in interesting wildlife.
 - b. The lake has become too shallow for recreational use and highly polluted.
 - c. A project has been commissioned to dredge the lake bed, create four islands, six raised reed-beds and introduce a water sports facility.
 - d. Twelve new jobs will be created through the introduction of a leisure company offering watersports facilities.
 - e. The LGA are expecting \$30,000 revenue per annum from the lake leasing fees, plus a 10% share of the revenue generated by the water sports hire fees.

2. Which **2** statements should be recorded under the **Business Options** section of the **Business Case**?
- A Government grant is available to fund the project.
 - Completely flush the lake and land-fill the area to create additional parkland and picnic areas. However, the cost to land-fill such a large area is considered to be too high.
 - The lake-related work will be outsourced to a specialist dredging firm and the water sports sales lodge will be created by the LGA's internal building works department.
 - It has been identified that, should the expected increase in visitors to the park be far exceeded, this may lead to future opportunities, such as building and letting a café bar, which would generate additional revenue for the LGA.
 - Leave the lake as it is, although the LGA will continue to incur large annual maintenance costs to clean the polluted water and the numbers of visitors to the park will continue to decline, having a further impact on the local economy.
3. Which **2** statements should be recorded under the **Expected benefits** section of the **Business Case**?
- A clean and safe environment for the water sports activities is a top priority.
 - The LGA are expecting annual revenues of \$30,000 from the leasing of the lake.
 - Should the expected increase in visitors to the park be far exceeded, this may lead to future opportunities, such as building and letting a café bar which would generate additional revenue for the LGA.
 - The current levels of damage to bird nests and eggs is expected to be substantially reduced by 70% through the introduction of the new safer nesting areas.
 - The project will create four islands and six raised reed-beds.
4. Which **2** statements should be recorded under the **Schedule** section of the **Business Case**?
- The project could be significantly delayed if large amounts of hard rock are encountered under the lake bed during the dredging work.
 - The number of visitors to the park has significantly declined over the last 3 years.
 - The project will be completed once the lake and selected leisure company is fully operational and the lake reopens to the general public, which is planned to be on 30th April.
 - The reduction in the current levels of damage to nests and eggs is expected to last for 10 years following the project.
 - Occasional ongoing maintenance to reinforce the island perimeters will be required during the first 2 years following the project at a cost of \$5,000.

5. Which **2** statements should be recorded under the **Costs** section of the **Business Case**?
- The project is to be funded by a Government grant.
 - It is estimated that the project will cost \$100,000.
 - Water quality of the lake will be improved, reducing the need to regularly treat the water. This will reduce the LGA's current annual lake maintenance costs by \$15,000.
 - The cost to land-fill such a large area was considered to be too high.
 - The attractions of having more interesting wildlife and new water sports activities are expected to significantly increase the number of visitors to the park, generating a further \$800,000 per annum for the local economy.
6. Which **2** statements should be recorded under the **Major Risks** section of the **Business Case**?
- The new islands and reed-beds are expected to create a valuable wildlife and safer nesting habitat.
 - It has been identified that, should the expected increase in visitors to the park be far exceeded, this may lead to future opportunities, such as building and letting a café bar, which would generate additional revenue for the LGA.
 - During the dredging and building work, for health and safety reasons, areas within the park will have to be closed to the general public. Local shop-owners have expressed their concerns that this will inevitably cause a further decline in park visitors and a consequential drop in their revenues during the project.
 - Occasional maintenance to reinforce the island perimeters will be required during the first 2 years following the project. \$5,000 has been allocated to cover this ongoing work.
 - Dredging work could be significantly delayed if any large amount of hard rock is encountered under the lake bed. If encountered, removal of the rock would also add substantial costs to the project due to specialist drilling equipment hire fees.