



University of South Australia

If you are required to use a calculator, please note the make and model here:

Calculator Make:

Calculator Model:

**2006 Mid Year Examination**

Student ID Number

Student ID Number																			
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Family Name	
Given Names	

**Division of Information Technology, Engineering and the Environment**

**School of Natural and Built Environments**

**Course Name            Project Procurement**

**Subject Area            BUSS            Catalogue Number    5143**

**Examination Day      Saturday      Examination Date    1 July 2006**

**Examination Time    09.00h      Length of Exam      3 hours**

<b>Examination Venue:</b>	RAS/Ridley Centre
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**Instructions to Candidates**

**This is a closed book examination.**

**You must answer all three questions.**

**Question 1 is worth 20 marks**

**Question 2 is worth 40 marks**

**Question 3 is worth 40 marks**

### **Conduct in examinations**

- Students are responsible for finding out their examination times and locations and for travelling to the venue. Examination times and locations are published on the University web site and advertised on the student portal. It is recommended that students arrive at least 15 minutes prior to the advertised start time.
- Students who arrive up to 30 minutes after the published start time will be permitted to enter the examination room but will not be allowed any additional time to complete the examination.
- Students who arrive more than 30 minutes after the published start time will not be permitted to enter the examination room and will receive a zero mark for that assessment.
- All students must bring with them, and display on their desk:
  - their student identification card; or
  - an alternative form of photographic identification such as a passport or driver's license. If a student does not provide acceptable photographic identification the invigilator will compare the student's likeness with University records in order to verify the student's identity;
- Where applicable, students must also display on their desk:
  - an approved disability access plan; and/or
  - an ENTEXT Card (for students who are entitled to extra time but have not been issued with an indicator on their student identification card)
- Unless otherwise specified in the course information booklet or as an agreed provision under Section 3: Moderation and Variation, a student must not take into the examination room any item with the potential to provide them or another student with an advantage, including but not limited to:
  - text books or any other book including dictionaries
  - calculators
  - mobile telephones, personal digital assistants, messaging devices or any other electronic device
  - notes, or other written documents
  - devices or personal items
  - examination answer booklets, attendance slips or scrap paper
- Any items specified as being allowed in the course information booklet must not be enhanced or tampered with in any way that provides an additional advantage to the student or any other student.

### **Procedures during the examination**

- Every student must complete the attendance slip provided.
- The examination starting time may include a designated reading time for students. During this reading time, students are not permitted to write in the examination booklets but may complete attendance slips, fill in details required on the front cover of examination booklets, and make notes on loose-leaf paper provided. An invigilator will announce when the reading time has elapsed, after which students may write in the examination booklet.
- No student will commence writing answers until authorised by an invigilator. All students must stop writing when instructed by an invigilator. At the end of the examination all students must remain seated until all examination booklets have been collected.
- During an examination students are not permitted to speak to or communicate with any other student, or give or receive any form of assistance, academic or otherwise.

### **Procedures for leaving the examination room**

- Students are not permitted to leave the examination room in the first 30 minutes after the published starting time or during the last 10 minutes of any examination.
- After the first 30 minutes of the examination has lapsed, a student can request to leave the examination room for a short break. When approval is given by an invigilator, the student will be supervised during the period of absence.
- Students wishing to permanently leave the examination room must hand all examination booklets to the invigilator who will endorse the booklets as correctly identifying the student. Students cannot remove any examination answer booklets, scrap paper or attendance slips from the examination room.

### **Breaches of examination procedures**

- A breach of the examination procedures may constitute academic misconduct. Procedures are deemed to be breached even if it cannot be demonstrated that the student gained an advantage from the breach. For example, if a student takes a mobile telephone or device into the examination room but does not switch it on or remove it from their pocket, it may still constitute academic misconduct although the intent is recognised in determining an appropriate outcome.
- Breaches of the examination procedures will be recorded under Section 9: Academic Integrity of this manual whether they constitute academic misconduct or not.

### **Procedures for breaches that cause disruption to an examination**

- Any student disrupting the examination can be instantly dismissed from the examination room at the discretion of the chief invigilator. Where dismissal is the appropriate course of action, the chief invigilator will document the incident and provide a report to the Head of School or Director: Regional Engagement or nominee.
- The Head of School or Director: Regional Engagement or nominee will investigate the incident as either:
  - academic misconduct by following the procedures for formal inquiry set out in Section 9: Academic Integrity, or
  - misconduct under Statute 7: Student Misconduct.
- Where dismissal is not deemed appropriate by the chief invigilator, the student will be permitted to remain in the examination, and clause 6.6 will apply.

### **Procedures for breaches that do not cause disruption to an examination**

- If a breach is detected that does not cause disruption to the examination, or is assessed by the chief invigilator as not warranting dismissal from the examination room, the invigilator will tell the student that the breach has been detected and will be reported.
- The invigilator will document the incident and will provide a copy of this report to the Academic Integrity Officer at the relevant school within 5 working days of the incident.
- If the Academic Integrity Officer considers that the breach constitutes academic misconduct, they will investigate the incident by following the procedures for managing alleged academic misconduct set out in Section 9: Academic Integrity.
- If the Academic Integrity Officer considers that the breach does not constitute academic misconduct, they will provide academic counselling to the student.

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## Question 1 Multiple choice (20 marks)

For each of the twenty (20) questions, circle the most correct answer: (a), (b), (c), or (d). Each question is worth 1 mark.

1. **Value chain management** is

- (a) Ensuring the contractor has met compliance with the agreed contract through the use of key performance indicators.
- (b) Achieving extra value, over and above that required of the contract through managing the performance of the contractor and the expectations of other stakeholders.
- (c) Achieving long-term extra value through developing relationships & alliances.
- (d) All the above.

2. A **Public Private Partnership** is

- (a) A legal entity, a Partnership, owned fifty-fifty by Government and a private company/consortium.
- (b) A contractual method used for financing research & development projects.
- (c) A strategy for financing large infrastructure projects.
- (d) None of the above.

3. A **novated contract**

- (a) Is used where it is considered likely that the financial guarantor will have to take responsibility for a project from the contractor.
- (b) Requires that responsibility for the complete design is taken by the contractor.
- (c) Means that the original contract can be continued with different contract parties.
- (d) None of the above.

4. An **acquisition plan** includes

- (a) The Request for Tender (RFT).
- (b) The contract management strategy.
- (c) Negotiation strategy.
- (d) All of the above.

5. **Guaranteed Maximum Price** projects
- (a) Comprise adjustable and non-adjustable parts.
  - (b) Have a maximum price which cannot be exceeded for any reason.
  - (c) Are based on shared pain and gain principles.
  - (d) All of the above.
6. Which market approach is typically used in the second stage of a **multiple staged procurement process**
- (a) A Selective Request for Tender (SRFT).
  - (b) A Request for Proposal (RFP).
  - (c) An open Request for Tender (RFT).
  - (d) All of the above.
7. In a tender document where are the **evaluation criteria** often shown
- (a) Part A Conditions of Tender.
  - (b) Part B Specification.
  - (c) Part C Conditions of Contract.
  - (d) Part D Tenderer Responses Schedules.
8. **Fast-tracking** means simultaneous
- (a) Management and design of a contract.
  - (b) Construction and design of a contract.
  - (c) Construction and management of a contract.
  - (d) All of the above.
9. A **design and construct** project
- (a) Has competitive design.
  - (b) Is outcome driven and fit for purpose.
  - (c) Is another name for a turnkey project.
  - (d) All of the above.

10. Which **evaluation technique** would be most suitable for assessing tenders from a prequalification panel of landscape contractors
- (a) Cost effectiveness ratio.
  - (b) Pure matrix.
  - (c) Matrix with scoring hurdles.
  - (d) Lowest total cost.
11. With **Traditional Contracting**
- (a) Fast tracking occurs.
  - (b) Relations between contractor and owner are frequently adversarial.
  - (c) Constructability is enhanced.
  - (d) All of the above.
12. Which **general conditions of contract** would be most suitable for a minor works contract where a superintendent is required
- (a) AS2124.
  - (b) AS4905.
  - (c) AS4000.
  - (d) AS4906.
13. A **BOOT strategy**
- (a) Requires a lump sum contract to implement it.
  - (b) Facilitates infrastructure development using the contractor's funds.
  - (c) Means build outsource operate transfer.
  - (d) None of the above.
14. A **functional specification** may contain which of the following
- (a) Details of compatibility issues that must be addressed by contractors.
  - (b) The scope of work that the contractor is required to perform.
  - (c) The performance standards required of the contractor.
  - (d) The quality assurance processes to be undertaken by the contractor.

15. An **Alliance Contract**

- (a) Reflects pain and gain sharing principals.
- (b) Legally, is the same thing as a Partnering arrangement.
- (c) Is a form of contract used to implement PPP's.
- (d) All of the above.

16. When a **Construction Manager** is used

- (a) Contracts for the works are with the construction manager.
- (b) The construction manager might do some of the work himself.
- (c) The construction manager acts as a consultant to the owner
- (d) All of the above.

17. **Post tender negotiations**

- (a) Are effective to obtain the lowest possible price from tenderers.
- (b) Are only conducted with the preferred tenderer.
- (c) Can eliminate unnecessary costs.
- (d) None of the above.

18. Assessing the **veracity** of tenderer(s) proposals may include

- (a) Conducting referee checks.
- (b) Conducting site visits.
- (c) Checking their past performance.
- (d) All of the above.

19. When a Management Contractor is used

- (a) Contracts for the works are with the management contractor.
- (b) The management contractor might do some of the work himself.
- (c) The management contractor manages the construction.
- (d) All of the above.

20. Contracts may be concluded through **agreement** i.e.

- (a) Mutual agreement.
- (b) Arbitration.
- (c) Mediation.
- (d) All the above.

## **Question 2: Case Study: Procurement and Contracting Strategies (40 marks)**

Read the scenario then answer all three parts of the question. Your answer should address the scenario using models and theory to do so but your answer should not just provide a theoretical list of points without relating them to the situation.

### **Scenario Air Control**

National Air Control Agency (NACA) is responsible for all air traffic movements and control in the country and adjoining international air corridors. NACA is a statutory authority.

As a result of a homeland security audit it has been decided as a matter of urgency to upgrade the air traffic control facilities across the country. Project approval has been given and funds allocated by the Board.

The project comprises building and installing new control facilities at 16 regional centres spread around the country. The facilities will be stand-alone buildings with special security. The operational electronics equipment and systems required in the all-new facilities have been designed and the building parameters and new high-security requirements have been specified.

Specifically, this project comprises the design and construction of the 16 centres and the supply and installation of the control equipment. (Responsibility for installing software and control systems and interfaces, is specifically excluded from the project. This will be done in-house after the facilities are handed over). NACA management has indicated that it would prefer a standardized facility design (although each of the 16 sites is unique) and a standardized internal layout. The NACA Board has established a 24 month timetable to have all 16 facilities constructed and ready for handover. The timetable allows either consecutive or concurrent development of the 16 sites. The Board has indicated that apart from delivering the project on-time, a quality outcome and delivering the project within the budget are critical.

NACA has project management experience in developing and implementing control systems but no experience in facilities development.

In this case study you will consider three key questions with which NACA is faced in bringing the program to reality. The questions commence with the overarching procurement strategy, then address contracting strategy and conclude with consideration of an alternative approach. The three questions are independent and each answer should not refer to or rely on the answers to the other parts.

## **2.1 Procurement strategies (15 marks)**

Briefly discuss **two** alternative overarching procurement strategies available to NACA **excluding** an alliance.

Your discussion should address for each alternative strategy how the components of the project could be packaged, the exercise of control, allocation of risk and financing model (owner financed, contractor-financed, hybrid etc). The important thing is to demonstrate two different ways in which the project could be procured - the classification of the strategy is not important.

You should define how each strategy would work and identify the advantages and disadvantages and key risks associated with each.

You do **not** have to recommend which strategy should be adopted.

Your discussion may refer to the contracting implications but should not be detailed because the concern here is with the overarching approach and the contracting strategy is covered in 2.2.

## **2.2 Contracting strategies (15marks)**

Assume that NACA has decided on a strategy of having a single source responsible for all sites, that is, NACA has decided that it wants to deal with a single party only. It is now considering which is the most appropriate contracting strategy for the sole-source approach.

Briefly, you are to discuss the merits and disadvantages of the following three contracting strategies under consideration by NACA to implement its overarching approach:

- (a) A **Turnkey** arrangement covering the design and construction and fit-out of the entire 16 sites;
- (b) Engaging a **Construction Management** firm with international experience in managing high-security facility projects to manage the project at all sites on NACA's behalf; and
- (c) A **Novated** contract in which the concept design is prepared by a firm with appropriate expertise in high-security facilities design, enabling tenders to be submitted by construction contractors for the entire 16 site construction and fit-out on the basis of the design team being novated to the successful contractor.

### **2.3 Alternative strategy (10 marks)**

One of the Board members has expressed a view that this project, since it has 16 separate sites, could be suitable for undertaking on an alliance basis because this might be the best way to manage NACA's key risks (time, cost, quality).

Discuss the advantages and disadvantages of using (a) the Jim Ross Alliance Contract Model and (b) the Evans and Peck Competitive Alliance Model for this project. You do not have to say which is preferable.

### Question 3: Short Answers (40 marks)

You are required to answer any four of the five questions listed below. Each is worth 10 marks.

- 3.1** Procurement processes range from single stage to multiple staged.
1. List and define the potential processes;
  2. Identify when it is most appropriate to use each of the processes listed in 1 (above).
- 3.2** The AN/NZS 4360:2004 is used in a number of business functions including project management and procurement management.
1. Outline the similarities and differences between the use of the standard in project management and procurement management;
  2. Describe the range of risk treatments used in procurement.
- 3.3** It has been commented that '*the specification is one of the main causes of contractual failure*'.
1. What is the purpose of the specification;
  2. Discuss and argue the merits of the comment '*the specification is one of the main causes of contractual failure*' providing your reasoning for agreeing, disagreeing or otherwise.
- 3.4** There are a number of tender evaluation techniques.
1. List and define at least four evaluation techniques;
  2. Select three of the techniques you listed in 1 (above) and provide an example of a procurement project where that technique would be most suitable.

**3.5** A *contract management plan* is a useful tool to assist in managing a contract.

1. List and define the components of a contract management plan;
2. It has been commented that '*relationship management and partnering is more effective than compliance management*'.
  - Discuss and argue the merits of the comment providing your reasoning for agreeing, disagreeing or otherwise.