

**The University of Melbourne**

**Semester One, 2006**

**Faculty of Architecture, Building and Planning**

**Subject Number: 702-896**

**Subject Title: Construction Regulations A**

**Exam Duration: Three (3) hours**

**Reading Time: 15 minutes**

**This paper has 4 pages**

**Authorised materials:**

**Instructions to Invigilators:**

Standard script books only required.

Exam paper may be removed from the examination room.

**Instructions to students:**

Use two (2) separate answer books - one for Part (A) questions, one for Part (B) questions.

**Answer 2 questions from Part A and answer 2 questions from Part B and 1 other question from either Part A or Part B.**

Write your student number and the question numbers on each answer booklet.

Answer five (5) questions (out of nine (9) questions)

All marks are indicated after each question.

**Paper to be held by Baillieu Library**

## **PART A – BUILDING CODES AND REGULATIONS**

### **Question 1**

The Australian government is committed to sustainable development and has now introduced amendments to the energy efficiency part of the Building Code of Australia for commercial buildings in May 2006. Discuss if these measures are sufficient to deliver sustainable development.

### **Question 2**

Critically analyse whether the current building regulatory system in Australia meets the needs of the 21<sup>st</sup> century.

**(20 marks)**

### **Question 3**

a) Describe in detail which factors are taken into consideration in the termination of the appointment of a Building Surveyor in Victoria.

**(10 marks)**

b) Explain fully what is meant by the following terms in the BCA;

- i) Objective
- ii) Functional Statement
- iii) Performance Requirements
- iv) Classification

**(10 marks)**

### **Question 4**

a) Describe in detail how to use the deemed to satisfy aspects of the BCA. Use examples in your answer.

**(10 marks)**

b) Explain fully what is meant by the term 'alternate solution' with regard to the BCA. Use examples in your answer.

**(10 marks)**

## **PART B – FIRE SAFETY**

### **Question 5**

The use of a sprinkler system to automatically detect and fight a fire may be explained as part of a fire engineered solution. Explain fully the factors that fire engineers take into account when designing a sprinkler system.

**(20 marks)**

### **Question 6**

a) When buildings are designed for fire safety, designers and engineers are evaluating risk. Discuss fully how the causes of fire, fire statistics and risk are linked to inform building design. Use examples of fires you are aware of to illustrate your answer.

**(20 marks)**

### **Question 7**

Whilst fire safety engineers are able to design buildings featuring the latest technologies in passive and active fire protection, human behaviour is the most unpredictable aspect. Using at least three case study examples, describe in detail how human behaviour in fire tragedies has influenced fire legislation and fire safety design in buildings.

**(20 marks)**

### **Question 8**

Fire safety engineers are required to have a detailed knowledge of fire science. Describe fully the following principles in the context of fire science, using diagrams to illustrate your answer where appropriate;

- a) matter and density
- b) the principles of combustion and extinguishments
- c) the concept of heat transfer

**(20 marks)**

**Question 9**

Even with the most comprehensive fire safety provisions modern technology can provide, it is essential that fire safety management is properly addressed in our buildings. Discuss this statement.

**(20 marks)**