

UNIVERSITY OF SOUTH AUSTRALIA
SCHOOL OF GEOINFORMATICS PLANNING AND BUILDING

FIRE TECHNOLOGY 2 – EXTERNAL EXAMINATION

Date of examination: November, 2001

Examiner: Graham Brown

General instructions to candidates :

Write your name on the examination booklet.

You must answer all questions.

All questions and parts of questions have marks indicated in brackets e.g. (20 marks)

Lecture notes and text books and Australian Standards are permitted references.

Reading time is 10 minutes before commencing the paper.

Time for examination is 2 hours.

Maximum marks are 100.

Question 1.

The Fire Services need fire fighting equipment to be available so that they can use it to extinguish a fire in a building.

Discuss the items which would need to be installed in an office tower 10 storeys high and how these would be used to fight a fire on the seventh storey.

(20 marks)

Question 2.

- (a) You have been asked by your client to install a sprinkler system to cover the office area only of an office/showroom building. What might be the consequences of such an installation if a fire started in the showroom area ?

(10 marks)

Your client wants to install a sprinkler system into an existing building which has cold rooms in a kitchen area, a storage area for rare books, and a reading room area with a vaulted roof , exposed air conditioning duct work, and open web trusses.

Discuss the recommendations that you would make and the difficulties which could be encountered with the installation.

(10 marks)

Question 3.

(a) What type of smoke or heat detection devices or system of devices would you recommend for the following buildings and why would you make such a recommendation ?

- (1) an aircraft hangar
- (2) a backpackers hostel
- (3) the atrium space of a building
- (4) a large factory where smoke and flames and heat are normally present
- (5) a hospital ward

(15 marks)

(b) What are the advantages of an addressable fire detection system over a conventional system ?

(5 marks)

Question 4.

By the use of diagrams explain what the differences are between a “purge system” and a “zone system” used for smoke control in the event of a fire in a building.

Discuss why one system performs better than the other and why this is so.

(20 marks)

Question 5.

(a) Describe what could happen in a single storey unventilated shopping mall if a fire was to start in a shop opening to the mall ?

(10 marks)

(b) What means could you employ to limit the hazard to occupants from a fire such as the one in (a) above ?

(10 marks)