

SCHOOL OF GEOINFORMATICS PLANNING AND BUILDING

FIRE TECHNOLOGY 1 – External Examination

Date of examination: April 2003

Examiner: Graham Brown

General instructions to candidates :

Write your name on the examination booklet.

You must answer all questions.

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

Maximum marks:100

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.

Question 1.

A fire in a room can spread very quickly. Describe how a fire in an upholstered chair in the corner of a bed room will spread to the whole room, the reasons for this, and any significant events which will occur during the process . **(20 marks)**

Question 2.

Your client wants to use steel column and beam construction with concrete floors and precast concrete panels for a three storey office building. As a consequence of this the steel must be protected in some way.

Discuss the methods which could be used. **(20 marks)**

Question 3.

- (a) The severity of a fire depends on several factors. List these and explain the effect that each one has on the severity which can result. **(10 marks)**
- (b) Discuss how you would compare the severity of a fire of known duration and temperature recordings with the Standard Fire Curve. **(10 Marks)**

Questions continue on next page.

Question 4.

Fire resistance levels are used to ensure that appropriate construction is used to contain fire within compartments or to prevent fire spread between buildings.

Discuss how the fire resistance level for a plaster panel on steel stud wall would be determined. **(20 marks)**

Question 5.

Your client has asked you to outline the hazards that may be present in his backpackers hostel and make recommendations on what should be done to mitigate the risk to the occupants in the event of a fire as far as building construction and management is concerned.

The building is two storeys high and contains offices, kitchen and restaurant at ground level and dormitory, bedrooms, tea making room, and television lounge at first floor level. A single internal open stair connects the two storeys.

Discuss your recommendations. **(20 marks)**