

**UNIVERSITY OF SOUTH AUSTRALIA
SCHOOL OF GEOINFORAMTICS, PLANNING AND BUILDING**

**FIRE TECHNOLOGY 2 (EXTERNAL)
SEMESTER 1, 1998**

Time: 2 hours
Subject Code: 05468
Examiner: Graham Brown/George Zillante

General Instructions to Candidates:

Write your name on the examination booklet.

You must answer ALL questions

All questions are of equal value (20 marks each)

Maximum marks: 100

Permitted References: Text books, lecture notes, reference books,
Australian Standards and the Building Code of Australia

Question 1:

Discuss the factors which make water such a good general purpose extinguishing agent and how it can also be used in specialised systems to extinguish fires in flammable oils and how that extinguishment is achieved.

Question 2:

Describe how fire service crews attending a fire in a high rise building will use the installed fire hydrant system for an attack on a fire at a high level of the building.

- Discuss the importance of having a fire pump and water supply tank in a high rise building and how these should be set up to provide the required flows and pressures needed by the fire crew.

Question 3:

You have been asked to recommend a suitable fire detection system for a large warehouse containing palletised goods in stacks 4 metres high. The goods are contained in cardboard cartons.

- Discuss the type of system and components you would install and why you would recommend them.

Question 4:

The owner of a restaurant and bar complex which includes cold rooms for vegetables, and freezer rooms for meats and poultry in the food preparation area wants to install a sprinkler system to protect the premises.

The restaurant has a vaulted roof above the main dining area with a mezzanine area for private functions. The floor to roof height is 8 metres. The roof is constructed from sheet steel on exposed timber purlins and trusses. Cooling and heating is provided by exposed steel ductwork which in places is 1200mm in diameter.

- Describe the features you would incorporate into the sprinkler system and discuss any problems that could be encountered in such an installation.

Question 5:

You have been asked to provide a fire extinguishing system to protect a collection of rare books in a library. The books are stored on steel shelving in stacks of four shelves up to a height of 2 metres. The room is approximately 10 metres long and 5 metres wide.

- Discuss the type of system you would recommend and any precautions you would incorporate to ensure the safety of the occupants of the room should there be a fire in the room.