UNIVERSITY OF SOUTH AUSTRALIA
SCHOOL OF GEOINFORMATICS, PLANNING AND BUILDING
CONSTRUCTION 1 (10270)

Exam time: 3 hours

Instruction to Candidates:

All questions are of equal value. Attempt to answer five (5) questions only. You may illustrate your answer with carefully drawn sketch details suitably annotated.

Question 1 (20 marks)

a. What is "development" and what types of consent can be obtained under the Development Act?
b. Name five (5) documents required to apply for consent to build a class1a or 10a building.
c. What is a Standard and how are they used in respect of a project?
d. What are the principles which underpin the BCA?
e. What is the South Australian Housing Code?
f. What law, in South Australia, concerns environmental quality?

Question 2 (20 marks)

In recent times the community has become increasingly energy conscious. Government initiatives are slowly encouraging people to adopt energy efficiency measures.

a. Describe heat gain and heat loss in housing in metropolitan Adelaide and
b. What provisions can be made to incorporate low energy principles in both design and construction.

Question 3 (20 marks)

a. Define the site classifications for foundations as used by soil engineers.
b. What is a "footing"?
c. What procedures are undertaken in preparing a "slab on ground" footing/floor system? Assume a moderately reactive soil type.
d. What are the common causes of footing failure?
e. Describe three (3) types of termite management systems.
f. What are the major factors to be considered when preparing to construct a timber or steel floor frame system?

…./2

Question 4 (20 marks)
Attempt to answer ONLY five (5) of the following part questions.

a. Define what is meant by the terms "brick veneer on timber" and "brick veneer on steel".
b. Describe the advantages claimed by the proponents of each framing system in the context of walls and roofs in domestic construction.
c. List and describe the key timber wall frame members.
d. What is a "damp proof course" and how is it incorporated into full brick and cavity construction.
e. What is a "bond beam" and where is it to be found in domestic construction?
f. Describe what are meant by the terms "breather type sarking" and "coated board products".
g. List the advantages claimed for autoclaved aerated concrete blockwork.

Question 5 (20 marks)
Identify the various members utilised in a conventional cut and pitch roof framed in timber. Illustrate the members and their placement in a :-

a. Typical ceiling plan and
b. Typical roof plan.

OR

c. Identify with the aid of neat sketches the various components in a typical hip and valley truss roof and
d. Describe the advantages claimed for building with prefabricated roof trusses.

Question 6 (20 marks)
Describe the installation of plasterboard on framed walls and ceilings under the following headings :-

a. Define the materials used,
b. Describe the fixing of the sheets,
c. Describe the method of flush jointing and
d. Describe the lining of arches.

OR

Illustrate how the BCA and Australian Standards set the performance standards for public safety in the following areas :-

e. stair construction,
f. balustrades,
g. glazing and
h. power supply near swimming pools.

END QUESTIONS