the UNIVERSITY of GREENWICH

EXAMINATION PAPER:	**ACADEMIC SESSION 2006 / 2007**
Campus	**Avery Hill**
School	**Architecture and Construction**
Title of Programme	**BSc (Hons) Real Estate** **BSc (Hons) Construction Business Management** **BSc (Hons) Construction Surveying Management**
Level	**Undergraduate**
Academic Stage of the Course	**1**
TITLE OF PAPER	**TECHNOLOGY II : CONSTRUCTION**
COURSE CODE	**BUIL1027**
Date and Time	**Tuesday 22nd May 2007, start 9.30 am**
Duration:	**2 hours**

Attempt all of Part A and any three questions from Part B.

One mark is awarded for each correct answer in Part A.

Twenty five marks are awarded for each of the three questions attempted in Part B.

When attempting questions in Part A select one answer by making a strong unambiguous cross in the corresponding answer box overleaf. Where a candidate changes his or her mind after having made a choice, they should clearly delete the cross and select another answer box.

Answers to Part B should be written in the answer booklet provided with each answer clearly numbered and commenced on a separate page.

Candidates must comply with the 'Instructions' to Candidates' printed on the examination answer booklet.

Part A – Answer Sheet

Please attach this sheet to the examination answer book upon completion of the examination.

Question No.	(a)	(b)	(c)
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1. A typical site investigation for a low rise building project should comprise:
   a) A site reconnaissance and detailed physical investigation only.
   b) A desk top study, site reconnaissance and possibly a physical investigation.
   c) A desk top study and detailed physical investigation only.

2. The analysis of a vertical geological section through the ground beneath the surface of a site is useful for:
   a) Determining previous uses on a site.
   b) Determining the steepness of slopes on a site.
   c) Revealing the depth and thickness of strata beneath the surface of a site.

3. Which of the following is a cohesive soil?
   a) Peat.
   b) Clay.
   c) Gravel.

4. Continuous construction as used for most domestic dwellings in the UK is normally associated with which of the following foundation types:
   a) Large diameter rotary bored pile foundations
   b) Pad foundations.
   c) Strip foundations.

5. Shallow inspection pits or trial pits are a commonly used method of ground inspection during ground investigation for:
   a) Tall structures with very deep basements.
   b) Low rise residential structures with shallow foundations.
   c) Tunnelling works.

6. Short bored pile foundations are designed for use in:
   a) Non-shrinkable clays.
   b) Sand and gravels.
   c) Shrinkable clays.

7. The external walls of most modern UK domestic dwellings resist rain penetration due to:
   a) Being constructed with a cavity.
   b) The *overcoat* principle.
   c) The *raincoat* principle.

8. The usual function of an horizontal Damp Proof Course is to resist:
   a) Penetrating damp.
   b) Insect attack.
   c) Rising damp.

9. When constructing walls in masonry the mortar used should always be:
   a) Slightly weaker than the masonry walling units used.
   b) Slightly stronger than the masonry walling units used.
   c) Considerably stronger than the masonry walling units used.

10. The use of excessively cement rich concrete for floors will probably result in:
    a) Excessive expansion and cracking of the floor.
    b) Excessively slow drying out of the concrete floor.
    c) Excessive drying shrinkage and cracking of the floor.

11. Trussed rafters used in roof construction are normally jointed using:
    a) Gang nail plates.
    b) Skew nailing.
    c) Morticed and tenoned joints.

12. Plain roof tiles and slates are:
    a) Laid with a double lap.
    b) Laid with a single lap.
    c) Laid on slopes as low as 5 degrees.

13. Firring pieces are used in timber roof construction:
    a) To provide lateral restraint to walls.
    b) To prevent joists from twisting.
    c) To provide a slope for a flat roof surface.

14. A timber cold deck flat roof has thermal insulation:
    a) Beneath the roof decking.
    b) Above the roof decking.
    c) Above the roof covering.

15. One of the specific advantages of modular and dimensional coordination is that it:
    a) Ensures that buildings are set out correctly.
    b) Benefits designers and builders as they become familiar with standard ranges of interrelated sizes of building components.
    c) Reduces the cost of building.

16. Timber flooring is usually jointed using:
    a) Tongued and grooved joints.
    b) Glued joints.
    c) Butt joints.

17. The void beneath timber ground floors is:
    a) Always ventilated to remove any potential build up of moisture.
    b) Never ventilated as ventilation would reduce thermal comfort in the room above.
    c) Sometimes ventilated depending upon the situation.

18. A traditional bituminious built-up felt roof covering is usually laid in:
    a) One layer
    b) Two layers
    c) Three layers

19. Which one of the following statements is true?
    a) The colder air is the more water vapour it can contain and vice versa.
    b) The warmer air is the more water vapour it can contain and vice versa.
    c) Moisture generation in buildings will not lead to condensation problems.

20. Which one of the following can be used to assist in measuring humidity levels?
    a) Wet and dry bulb hygrometer.
    b) An anemometer.
    c) A dynamometer.

21. The temperature at which air becomes saturated is known as:
    a) Dew-point temperature
    b) Blue-point temperature.
    c) Thermodynamic temperature.

22. Relative humidity in what range is required for comfortable conditions?
    a) 0 – 40%
    b) 70 – 100%
    c) 40 – 70%

23. Which one of the following will not affect daylight levels in a room?
    a) The nature and brightness of the sky.
    b) The size, shape and position of windows (fenestration).
    c) The reflectance of the outside surface of the external walls of the room.

24. Generally, daylight has:
    a) A high luminous efficacy compared to electric lighting.
    b) A low luminous efficacy compared to electric lighting.
    c) About the same luminous efficacy as electric lighting.

25. The ratio between the actual illuminance at a point inside a room and the illuminance possible from an unobstructed hemisphere of the same sky is commonly known as:
    a) Daylight Factor.
    b) Reflectance Factor
    c) Diffuse Skylight Factor

Part B: Answer any three of the following questions

26. Discuss the functional requirements of internal plastering and explain how these requirements are met using modern plastering systems.

27. Describe how a typical UK domestic dwelling constructed using continuous loadbearing masonry and with a trussed rafter pitched roof resists dead, imposed and wind loads. Use sketches to illustrate your answer.

28. Describe the site investigation process explaining the relative importance of each stage in the context of low-rise building projects.

29. Discuss the functional requirements of internal and external doors using practical examples to illustrate your answer.

30. Discuss the functional requirements of internal walls for houses, and the influence that a loadbearing or non-loadbearing function may have on the selection of a suitable internal wall construction.

END OF PAPER