

**SIR ARTHUR LEIS COMMUNITY COLLEGE**  
**DIVISION OF TECHNICAL EDUCATION AND MANAGEMENT STUDIES**

**EXAMINATION SESSION** : May 2001 - Final Examinations

**TUTORS** : Ms. R. Isaac

**PROGRAMME TITLE** : Architectural Technology  
Construction Engineering  
Building Technicians

**PROGRAMME CODE** : ART 340/COE 341/BTN 309

**COURSE TITLE** : Building Technology

**COURSE CODE** : BLT 326/323

**CLASS(ES)** : Year Two

**DATE** : 15th May 2001

**TIME** : 9:00 a.m.

**DURATION** : 3 hours

**ROOM** : TRT R. 1 and 2

**INVIGILATOR** :



# B18

**INSTRUCTIONS:**

Answer **FOUR** out of the **SIX** questions set on this paper.

**ALL** questions carry equal marks.

- 1/ a. Explain the difference between a “Box Frame” type of construction and “Cross Wall” type of construction. [3 marks]
- b. With the aid of diagrams, explain each of the following:
- (i) Facings
  - (ii) claddings
  - (iii) In-fill Panel [9 marks]
- c. Give and explain three requirements of cladding materials. [3 marks]
- d. An insite reinforced concrete framed building is to have masonry cavity panel walls consisting of brick outer skin and light weight concrete block inner skin. The brick finish is to extend over the face of the frame; and brick slips are to be used to achieve continuity of appearance. Sketch a vertical section through the concrete edge beam, showing the brick slips and the cavity wall above and below the frame. Include ALL the construction details. [10 marks]
- 2/ a. Road construction can be divided into two distinct phases, name and explain each of the phases. [4 marks]
- b. Explain a typical pavement construction. [3 marks]
- c. Give three (3) design factors considered in determining the total thickness of asphalt pavements for parking areas and driveways. [3 marks]
- d. With the aid of sketches, differentiate between rigid pavements and flexible pavements. [8 marks]
- e. Explain the purpose of a contraction joint in regards to road construction. [2 marks]
- f. Describe with the aid of sketches; the details of construction of one of the following paving joints:
- (i) Expansion Joint
  - (ii) Construction Joint
  - (iii) Contraction Joint [5 marks]
- 3/ a. A domestic house is to be provided with a septic tank for a sewage system. Draw an annotated line diagram to show how a septic tank functions. [5 marks]
- b. State three (3) factors to be considered when providing a disposal system for an area. [3 marks]

c. Illustrate and describe one type of internal plumbing system which may be used for a multistorey building. State two (2) advantages and two disadvantages of the system chosen. [8 marks]

d. State and explain three (3) requirements of a good drainage system.[6 marks]

e. Explain the purpose of the following in regards to drainage

(I) Trap

(ii) Distribution Box

(iii) Man Holes

[3 marks]

4/ a. Define the term “Building Maintenance” and explain its importance to people in general. [6 marks]

b. The terms “Preventative Maintenance” and “Breakdown Maintenance” (Corrective) are usually associated with “Building Maintenance”. Compare the two stating how they may impact on the operations of a building.

[6 marks]

c. (i) State five advantages of preventative maintenance. [5 marks]

(ii) What is the first step in setting up a preventative maintenance schedule? [2 marks]

(iii) List and explain three (3) criteria to be used when determining the frequency of maintenance for a particular piece of equipment.

[6 marks]

5/ a. There are numerous methods of demolition which a contractor may employ , but the method chosen should suit both location of site and type of structure. Choose and explain a suitable method of demolition for the following:-

(i) Pre-stressed concrete structure

(ii) Partial demolition of a multi-storey concrete structure which is still partially occupied

[8 marks]

b. List the sequence of operations that may be employed in the demolishing and clearing away of an existing building. Indicate the type of equipment which may be used. [4 marks]

- c. By means of annotated sketches, show how the contractor:-
- (i) protects the public during demolition, clearing and excavating operations
  - (ii) makes use of scaffolding while working [8 marks]
- d. Choose five items which should be included in the detailed survey of a building to be demolished, giving reasons for their inclusion. [5 marks]
- 6/ a. In landscaping, the function of a building and that of the site in its supporting role, will dictate site requirements. State and explain three (3) site requirements in regards to landscaping. [9 marks]
- b. List three (3) items of landscaping site furniture, and briefly explain at least three (3) requirements pertaining to each. [9 marks]
- c. Discuss some general considerations which should be taken into account when planning for landscape maintenance. [7 marks]

**END OF EXAMINATION**