

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

EXAMINATION SESSION : May 2001, Final Examination

TUTORS : Mr. James Joseph

PROGRAMME TITLE : Architectural Technology
Construction Engineering
Quantity Surveying

PROGRAMME CODE : ART 340/COE 341

COURSE TITLE : Building Technology

COURSE CODE : BLT 314/315

CLASS(ES) : Year One

DATE : 14 May 2001

TIME : 9:00 a.m.

DURATION : 2 ½ hours

ROOM : TRT Room 1 & 2

INVIGILATOR : Mr. James Joseph



B23

**INSTRUCTIONS:**

- ◆ Answer four (4) questions
- ◆ All questions carry equal marks
- ◆ Begin each main question on a new page
- ◆ Number each answer appropriately
- ◆ Use sketches to aid answers where appropriate

BLT 314

BUILDING TECHNOLOGY

- 1/ (a) Sketch an elevational detail of a timber stud partition showing all important details including dry lining panels. [9 mks]
- (b) State concisely why it may become necessary to sound insulate the partition in 1 (a) above as well as a supporting wood joist floor beneath the partition. [8 mks]
- (c) Sketch a sectional detail of a method of sound insulating the wood joist floor referred to in 1 (b) above clearly showing ceiling material at the underside. [8 mks]
- 2/ (a) State concisely the situations where each of the following solid brick walls may be employed in building work.
- i. Flemish bond
 - ii. English bound
 - iii. Stretcher bound
- [7 mks]
- (b) Sketch in elevation and label each of the above walls in 2 (a). [9 mks]
- (c) Sketch a line diagram of an independent scaffold which may be used for the construction of walls and compare its use with the putlog scaffolding. [9 mks]
- 3/ (a) Produce a neat and labeled sketch to demonstrate the pattern of setting wall ties in a 275 mm cavity wall indicating horizontal and vertical dimensions. State why those ties are necessary. [10 mks]
- (b) Sketch the position of polystyrene boards in the cavity wall in 3 (a) above indicating the purpose of such boards. [7 mks]
- (c) Sketch a well anstated detail at the jamb of an external doorway set in the cavity wall in 3 (a) and 3 (b) above. [8 mks]

- 4/ (a) List the sequence of operations to a single storey domestic building commencing from clearing site to roof covering. [10 mks]
- (b) List and briefly describe the performance requirements of floor finishes. [9 mks]
- (c) List three finishes to the following components in a building giving merits and demerits.
- i. walls
 - ii. floors
 - iii. ceilings [6 mks]
- 5/ (a) Compare, with the use of sketches, the following methods of construction.
- i. Solid wall construction
 - ii. Framed Construction
 - iii. Cross-wall construction [12 mks]
- (b) Sketch a timber floor framing with an opening for a staircase identifying the common joist, trimmer, trimmed and trimming joists describing the functions of each in the floor construction. [10 mks]
- (c) Describe briefly the purpose of stairs in a building and list three common types of traditional stairs. [7 mks]
- i. Sketch and label a section through a straight flight of stairs showing all the important features. [8 mks]
- 6/ (a) State and briefly describe the functional requirements of roofs and list three types of traditional roofs. [8 mks]
- (b) Sketch and label a fire-resisting door and state the importance of fire resistance of components in buildings. [8 mks]
- (c) Sketch a vertical section through a timber casement window clearly showing details at head and sill and other outstanding features. [9 mks]

Question: 7

- (a) Differentiate between following external finishes. (1) Facing (2) Cladding (3) Infilling panels. (6 marks)
 - (b) Identify three (3) types of building material used to construct the following (1) Facing (2) Cladding (3) Infilling panels. (9 marks)
 - (c) Draw a section showing one of the materials identify to construct an Infilling panels. (5 marks)
- (20 marks)

Question: 8

- (a) Define the term shoring. (3 marks)
 - (b) How is shoring classify? (3 marks)
 - (c) Draw a section through a raking shore and indicate its purpose. (7 marks)
 - (d) Identify four (4) methods of utilizing flying shores to building. (8 marks)
- (20 marks)

Question: 9

- (a) Define the term underpinning. (4 marks)
 - (b) Give Three (3) reasons, why an existing building should be underpinned? (6 marks)
 - (c) What steps should be taken before underpinning? (5 marks)
 - (d) What precautions should be taken when underpinning commences? (5 marks)
- (20 marks)