

ITEMS PAST PAPERS

TECHNICAL

SIR ARTHUR LEWIS COMMUNITY COLLEGE

Division of Technical Education and Management Studies

End of Semester Exam

Examination Session : **May 2001**
Tutor(s) : **Philip J Larodé.**
Programme Title : **Building Technician I.**
Programme Code : **BTN309.**
Course Title : **Building Technology I**
Course Code : **BLT312**
Exam Date : **16th May**
Commencement Time : **9:00am**
Duration : **3 hours.**
Invigilator's : **P J Larodé**
Room : **TRT-R2**



B20

YOU SHOULD HAVE THE FOLLOWING FOR THIS EXAMINATION

Pen, Pencil, Eraser and Calculator

INSTRUCTIONS

- 1) Answer any four (4) questions.
- 2) All questions carry equal marks.
- 3) Start each question on a clean page.
- 4) All sketches must be fully annotated.
- 5) Borrowing and lending of equipment is not permitted.

QUESTION # 1

- a) Describe continuous foundation systems and identify two types. (6 marks)
- b) Sketch and annotate the vertical section through a beam and slab raft foundation at external wall. (9 marks)
- c) Using a fully annotated sketch to illustrate, describe concrete pad foundations and identify two structural elements they normally support. (6 marks)
- d) Using a fully annotated sketch to illustrate, describe displacement piles and identify two materials used to make them. (4 marks)

QUESTION # 2

- a) Using annotated sketches show two methods of supporting timber upper floor joists on a 255mm cavity wall. (6 marks)
- b) What is 'hardcore'; describe two functions that it serves. (4 marks)
- c) Use a fully annotated pictorial sketch to illustrate composite floors. (9 marks)
- d) Identify two advantages cellular steel floors have, when compared with normal in-situ reinforced concrete floors. (6 marks)

QUESTION # 3

- a) Describe load bearing walls and identify two necessary requirements for such a wall if it is external. (6 marks)
- b) Using annotated sketches to illustrate, describe the following walls and identify two materials used in the construction of each.
 - i) Monolithic walls, ii) Framed walls (8 marks)
- c) Sketch and annotate the vertical section through the head of a window opening for a one brick wall. (4 marks)
- d) Using an annotated sketch to illustrate, identify and describe one way in which a wall can fail. (7 marks)

QUESTION # 4

- a) Explain the following stairway terms:
i) Tread, ii) Flight, iii) Waist, iv) Balustrade, v) Pitch/Slope. (5 marks)
- b) Sketch and annotate the plan view of the following stair:
i) Quarter turn, ii) Dog-legged. (6 marks)
- c) Sketch and annotate the longitudinal section through a string and trimmer stair with five (5) treads and two landings; show all reinforcements. (10 marks)
- d) Describe precast concrete stairs. (4 marks)

QUESTION # 5

- a) Sketch and annotate the following roof forms:
i) Flat, ii) Gable, iii) Mansard. (6 marks)
- b) Describe mastic asphalt roof covering and include its application. (5 marks)
- c) Explain the function of the roof structure and identify two materials from which it can be fabricated. (6 marks)
- d) Produce annotated sketches of the following roof structures:
i) Couple, ii) Collar. (8 marks)

QUESTION # 6

- a) What is a roof truss and why is its rigidity important? (5 marks)
- b) Identify two materials used in the fabrication of roof trusses and describe the form in which they are used. (6 marks)
- c) Using single lines to represent members' produce annotated sketches of the following trusses:
i) King post, ii) Howe. (6 marks)
- d) Joints in timber trusses provide either rigidity or continuity; produce one annotated sketch each type. Identify each joint. (8 marks)

END OF PAPER