C A R I B B E A N E X A M I N A T I O N S C O U N C I L

REPORT ON CANDIDATES' WORK IN THE CARIBBEAN SECONDARY EDUCATION CERTIFICATE® EXAMINATION

MAY/JUNE 2013

BUILDING TECHNOLOGY (CONSTRUCTION) TECHNICAL PROFICIENCY EXAMINATION

GENERAL COMMENTS

The number of candidates writing the examination was 1883 with approximately 82 per cent earning Grades I–III compared with 71 per cent in 2012. The improved overall performance in 2013 is reflected in improved or comparable performance on all profiles. On Profile 1, Knowledge, 69 per cent of candidates earned Grades I–III compared with 73 per cent in 2012. For Profile 2, Application, 59 per cent of candidates earned Grades I–III compared with 50 per cent in 2012. On Profile 3, Practical Ability, 97 per cent of candidates earned Grades I–III compared with 95 per cent in 2012. Candidates did quite well on the practical project of the School-Based Assessment (SBA) but some weaknesses were evident in the written component.

DETAILED COMMENTS

Paper 01 — Multiple Choice

This paper comprised a total of 60 multiple choice items based on all the theoretical aspects of the syllabus. Candidates responded reasonably well to most of the questions. However, there were instances where candidates' responses were inadequate thus suggesting insufficient preparation for the examination. Overall, performance on this paper was below that of 2012. The mean score was 31.3 compared with 34.3 for 2012. The maximum score in 2013 was 49, while the minimum score was 11 compared with the highest score of 57 and lowest score of zero in 2012. Teachers are reminded that the intent of the multiple choice paper is to test a wide spectrum of the syllabus, and as such it is important that students are prepared with respect to the entire syllabus.

Paper 02 — Restricted Response Essay Questions

This is a free response paper divided into three sections. Each question receives equal weighting for the profile dimensions Knowledge and Application.

Section A — One compulsory design question based on Modules D5 to D9 of the syllabus. The question is worth 40 marks.

Section B — Five questions based on Modules D2 to D10 of the syllabus. Candidates are required to answer three questions. Each question is worth 20 marks.

Section C — Three questions based on Modules D11 to D13 of the syllabus. Candidates are required to answer one question. Each question is worth 20 marks.

Section A

Question 1

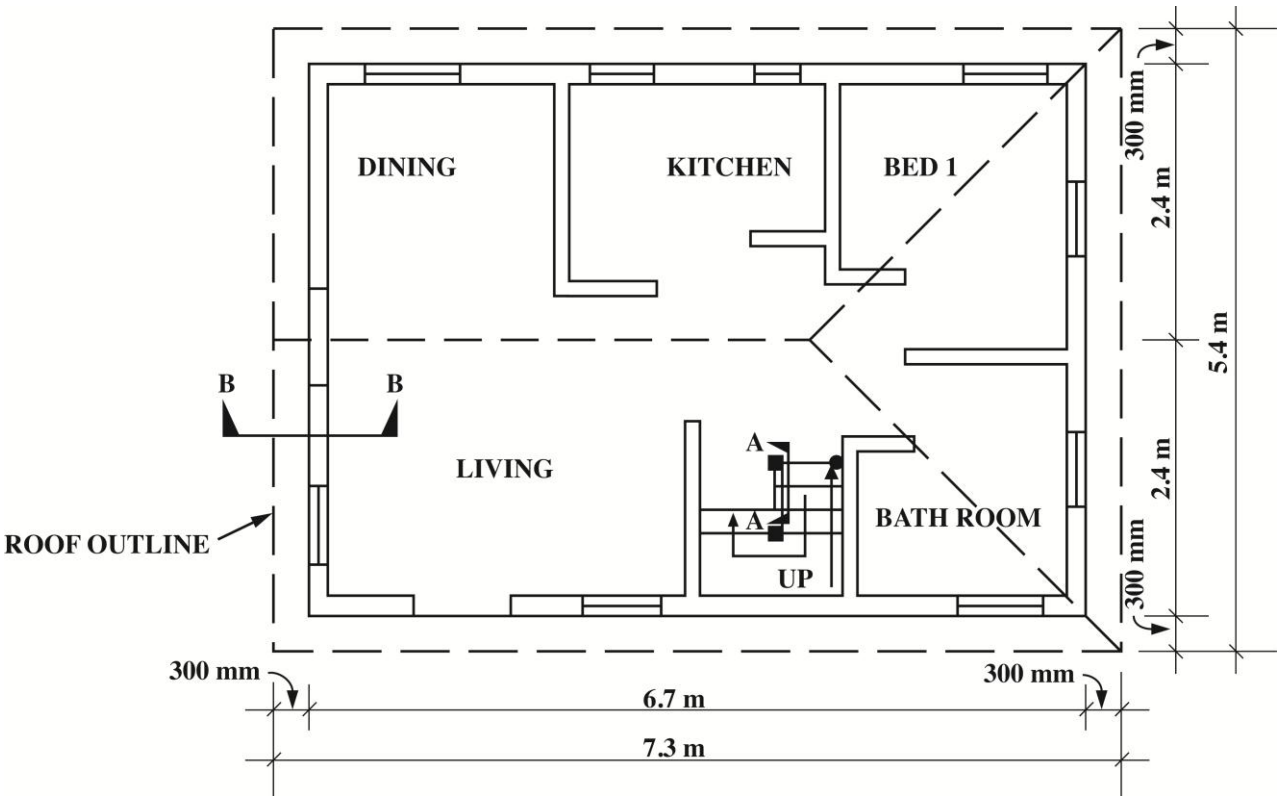


Figure 1

This compulsory design question comprised six parts and was designed to test candidates' knowledge and application of skills in the best practices adopted in the construction industry when working on doors and door frames, walls, floors, stairs and roofs.

Candidates were presented with a floor plan of a two-storey dwelling house; 6.7 m long by 4.8 m wide. The foundation walls were constructed using 200 mm hollow concrete blocks, and the exterior walls were constructed of 150 mm hollow concrete block walls. The floor, partitions and staircase were all constructed using timber.

Part (a) was widely known as it was attempted by most candidates and they performed well on it. It tested candidates' ability to apply their knowledge of roof construction. This part of the question required candidates to produce a neat sketch of the roof plan in Figure 1, showing the correct arrangement of all the roof members. Candidates were advised that *only* the outline of the external walls was required for that part of the question. Some candidates were unable to put the roof members in the correct places; they sketched a roof with valley rafters rather than the simple roof with a hip and gable end. Additionally, there was evidence to suggest that candidates did not read the instructions carefully, because in spite of having notes placed at the end of the question, candidates produced work that was not required by the question.

Part (b) tested candidates' knowledge of the framing members of a roof. Candidates were asked to name five members of the roof they produced in Part (a). Some candidates were not able to name the five roof members. The crown rafter was one of the members with which candidates were unfamiliar. Several candidates did not show the wall plate over the wall on the plan; however, they used broken lines to show the wall outline.

Part (c) tested candidates' ability to apply their knowledge of the correct method of fixing rafters to wall plates in a roof. They were asked to produce a neat, labelled sketch to show rafters correctly fixed to a wall plate. This is especially important for proper load distribution and fixing of the rafters when framing a roof. Local construction methods which do not utilize wall plates were produced. Teachers need to encourage candidates to use best practices when responding to questions.

Part (d) tested candidates' knowledge of types of roof coverings, they were asked to name four types of roof coverings. Most candidates satisfactorily identified roof coverings.

Part (e) tested candidates' knowledge of floors and floor construction and required them to produce a labelled sectional sketch at B-B on the floor plan in Figure 1. A note was inserted directing candidates not to produce foundation and roof details. However, candidates completed an entire sketch but omitted vital information for which marks were being awarded, namely the parts of the floor.

Part (f) had three parts (i, ii and iii) and tested knowledge of stair construction and building regulations associated with stairs. Part (f) (i) asked candidates to name four parts of the staircase shown in Figure 1 that can be identified when a detailed vertical section is produced at A-A. Part (f) (ii) required candidates to describe each of the four parts named in Part (f) (i) while Part (f) (iii) asked candidates to state the minimum dimensions for tread width, headroom and space between balusters according to the building regulations.

Part (f) (iii) presented the greatest difficulty for candidates. Many of them did not attempt this part and those who did gave incorrect responses. They used imperial rather than metric measurements to state their answer. The topic needs to be given more attention in the classroom.

The mean score for this question was 17.8, with no candidate achieving full marks. Fifty-three per cent of candidates scored in the range of 18-38. Forty-four candidates scored zero on the question.

Appendix 1 contains sample responses to the parts of Question 1 that posed a challenge to candidates.

Section B

Question 2

This question tested candidates' knowledge and their ability to apply that knowledge in the areas of site preparation, basic site management and setting out. This was a very popular question.

Part (a) required candidates to list factors that must be considered when selecting a building site. This part of the question was widely known and candidates performed very well.

Part (b) required candidates to state three reasons for stripping a building site. Candidates performed very well on this part of the question.

Part (c) (i) required candidates to state four reasons for hoarding a building site. This was well done. In Part (c) (ii), candidates were asked to explain the importance of any three of the reasons for hoarding given in their response to Part (c) (i). This too was well done.

In Part (d), candidates were asked to sketch two methods used for checking the accuracy of 90º corners when setting out a small building. This question presented some difficulty for weaker candidates. However, the better prepared candidates performed very well on this part of the question and produced excellent sketches.

The mean score for this question was 14.4, with 16 candidates achieving full marks. Seventy-three per cent of candidates who attempted this question scored in the range of 9-20. Thirty-one candidates scored zero on the question.

See Appendix 2 for sample responses to the parts of question 2 that posed a challenge to candidates.

Question 3

This question tested candidates' knowledge of different building materials such as timber, concrete, mortar and plastics. It also tested candidates' application of this knowledge regarding the construction industry. This was a popular question.

Parts (a) (i) and (ii) required candidates to define the terms *concrete* and *mortar* respectively. Most candidates responded very well to this part of the question.

Part (b) asked candidates to list three characteristics of aggregates used for making concrete. Some candidates did not seem to know the characteristics and did not respond to this part. However, the better candidates were able to perform very well on this part of the question.

Part (c) asked candidates to explain the benefits to be derived from *proportioning* or *batching* a concrete mix.

Part (d) required candidates to list three uses of plastics in the building construction industry. This part of the question was very well done by most candidates; however, some candidates gave properties rather than uses of plastics.

Part (e) required candidates to use sketches to show two types of natural defects in timber. This was generally very well done. However, some candidates presented sketches of seasoning defects, rather than natural defects like shakes and knots.

The mean score for this question was 8.0, with no candidate achieving full marks. Forty-six per cent of candidates who attempted this question scored in the range of 9-20. Fifty-three candidates scored zero on this question.

See Appendix 3 for sample responses to the parts of Question 3 that posed a challenge to candidates.

Question 4

This question tested candidates' knowledge and their ability to apply knowledge of different types of foundations, timbering and its function, moist curing of concrete and the steps involved in carrying out the slump test. This was not a very popular question, less than 50 per cent of candidates attempted it.

Part (a) asked candidates to state three functions of foundations. This part of the question was widely known and candidates were able to correctly state the functions.

In Part (b), they were asked to use labelled sectional sketches to illustrate strip and raft foundations. Candidates were able to draw the foundations correctly in most cases.

Part (c) required candidates to use labelled sketches to illustrate the method of applying timbering in a trench which was dug in firm soil.

Part (d) asked candidates to state one function of timbering.

Part (e) required candidates to state three methods of *moist curing* as it relates to concrete.

Part (f) required candidates to list the first three steps when conducting a slump test as it relates to wet concrete.

Part (e) was not well done, as candidates seemed unfamiliar with the term *moist curing* and the different methods used.

The mean score for this question was 7.4, with no candidate achieving full marks. Thirty-seven per cent of candidates who attempted this question, had scored in the range of 9-19. Thirteen candidates scored zero on the question.

See Appendix 4 for sample responses to the parts of Question 4 that received poor responses from candidates.

Question 5

This question tested candidates' ability to apply their knowledge of walls and bonding, types of brick bonds and stud partition construction and their importance in the construction industry. This question was not very popular among candidates and was attempted by less than 50 per cent of candidates.

In Part (a), candidates were asked to state three functions of external walls of a building. Part (b) (i) required candidates to define the term *bonding* as it relates to masonry walls. Part (b) (ii) asked candidates to explain the importance of bonding in masonry wall construction. Part (c) required candidates to name three types of brick bonds.

Part (d) required candidates to sketch a stud partition with a door opening incorporated into it. Candidates were also reminded that the best construction practices should be shown. Generally, all parts of the question were well done.

The mean score for this question was 11.5, with 14 candidates achieving full marks. Sixty-eight per cent of candidates who attempted this question scored in the range of 9-20. Only three candidates scored zero on the question.

See Appendix 5 for sample responses to the parts of Question 5 that received poor responses from candidates.

Question 6

This question tested candidates' knowledge of doors, floors, windows and the application of varnish to a new door. It also tested their ability to apply that knowledge in various areas of the construction industry. This question was popular among candidates.

Part (a) required candidates to state two functions of doors. This part of the question was widely known and most candidates performed well. Part (b) required candidates to state three functions of floors.

Parts (c) and (d) required candidates to name three members of a timber floor and state one function each for any two of the members named. In Part (e), candidates were asked to sketch two different types of windows.

Part (f) required candidates to briefly explain the correct sequence to be followed when applying varnish to a new door surface. Some candidates included information about preparing a new door for a finish, and then proceeded to give the steps to be followed when applying varnish to a new door. The question simply asked for steps to be followed when applying varnish to a new door. There is need, therefore, for emphasis to be placed on the difference between preparation for a finish and the application of a finish.

The mean score for this question was 10.7, with two candidates achieving full marks. Seventy-nine per cent of candidates who attempted this question scored in the range of 9-20. Only two candidates scored zero on the question.

See Appendix 6 for sample responses to the parts of Question 6 that received poor responses from candidates.

Section C

Question 7

This question tested candidates' knowledge of and their ability to apply knowledge of the building trades. Additionally, candidates were required to name members of the building team and state their responsibilities on a construction project/site. This question was popular among candidates, with approximately 82 per cent of them attempting it.

Parts (a) (i) and (ii) asked candidates to list five building trades and state the main function of each. These parts of the question were widely known and candidates performed very well. However, there is need for candidates to provide better responses when asked for the function of trade persons in the building trades; for example, a painter does more than simply paint. He/she mixes paints, prepares surfaces and applies different types of finishes (varnish, paint, wax and polishes).

Parts (b) (i) and (ii) required candidates to use a simple flow chart to show the line of authority of members of the building team from a given list. The members given were *client*, *engineer*, *building contractor* and *architect*. Candidates were also asked to explain the function of any three of the members given in the list. This part presented some difficulty for candidates, especially the flow chart. They were not able to place the members of the building team in the correct order of authority. Candidates should anticipate questions in varying forms and should not expect questions exactly as they see them in past papers. This part of the syllabus should be taught well enough to allow candidates to respond to questions on the topic irrespective of their structure.

The mean score for this question was 12.1, with 36 candidates achieving full marks. Seventy-seven per cent of candidates who attempted this question, scored in the range of 9-20. Twelve candidates scored zero on the question.

See Appendix 7 for sample responses to the parts of Question 7 that received poor responses from candidates.

Question 8

This question tested candidates' ability to apply knowledge of sewage disposal systems and the knowledge of the various terms associated with waste disposal systems. This was not a very popular question among candidates; eleven per cent of them attempted it.

In Part (a), candidates were asked to use vertical sectional sketches to illustrate how septic tanks and soakaways work. Part (b) asked candidates to define the terms *cesspool*, *surface-water drain*, *sewer pipe*, *sewage* and *drain pipe*.

The mean score for this question was 8.8, with no candidate achieving full marks. Forty-nine per cent of candidates who attempted this question, scored in the range of 9-18. Three candidates scored zero on the question.

See Appendix 8 for sample responses to the parts of Question 8 that received poor responses from candidates.

Question 9

This question tested candidates' ability to apply their knowledge of factors that influence building design and European architectural features that have influenced the design of buildings in the Caribbean. This question was not very popular, less than five per cent of them attempted it.

Part (a) (i) required candidates to identify four factors that influence the design of a building.

Part (a) (ii) required candidates to explain any three of the factors identified in Part (a) (i).

Part (b) (i) required candidates to describe three European architectural features that have influenced building design in the Caribbean. Part (b) (ii) required candidates to use sketches to illustrate any two of the features identified in Part (b) (i).

Part (a) (i) was widely known by candidates, who had very little difficulty listing the factors influencing building design. In Part (a) (ii), candidates had difficulty explaining the factors they listed.

The mean score for this question was 10.1, with one candidate achieving full marks. Fifty-seven per cent of candidates who attempted this question scored in the range of 9-20. Six candidates scored zero on the question.

See Appendix 9 for sample responses to the parts of Question 9 that received poor responses from candidates**.**

Paper 03 – School-Based Assessment (SBA)

The SBA is intended to be a diagnostic, formative and summative assessment tool. Students can present their best efforts once the suggested time frame is followed by teachers. The new format requiring both a practical and written project should be taken seriously if students are to develop the intended competencies.

Students are required to complete two assignments during terms four and five (terms one and two of the examination year) and each students is required to complete:

- One practical project, worth 90 marks, from a list published by CXC. The practical covers Profile 3, Practical Ability.

- A written assignment, worth 30 marks, testing Profile 3 (Practical Ability) set by the classroom teacher in keeping with the guidelines outlined by CXC and based on the Common Modules D1, D14 and D15.

Students continue to perform creditably on the SBA practical projects. However, the written assignment continues to be challenging for weaker candidates.

This year's moderation analysis revealed that there is a trend across territories whereby students' written reports were reproductions of a single report. Additionally, some teachers seem to be reusing reports and projects from previous years. This unacceptable practice impacts negatively on students' overall scores. It was also found that teachers' assessment of the written reports appeared to be quite generous and, in some instances, contrary to the suggested mark scheme.

A major aspect of the SBA practical project is design, which entails drawing, and the selection of materials, machine processes, manual processes and the evaluation of various methods and systems in building technology.

This aspect of the programme must be managed by the teacher, if students are to derive maximum benefit from the use of drawing skills and knowing how to relate theory to practice.

The format developed to ensure that the skills are organized systematically include the following:

- Preliminary considerations (usually a statement of what the students want to do)
- Preliminary design
- A pictorial sketch of the project idea
- Production of a set of working drawings (orthographic, including sectional views)
- Estimating the quantities and types of material and cost
- Selecting appropriate materials (or suitable alternatives)
- Selecting tools and machinery
- Developing a plan of operations
- Implementing a plan of operations, in order to complete the project
- Supervision of team members and coordination of various operations

A series of practical exercises should be developed by the teacher and administered to students. While this is being done, the teacher should observe the students and identify those who exhibit a greater sense of responsibility and mastery of the related skills. These individuals should be used to assist or lead a small group (3–5) in completing larger and more difficult projects.

RECOMMENDATIONS TO TEACHERS

General recommendations to teachers for previous years are repeated here for those who are new and for those who may not have seen them before. Please note that the recommendations are made by the examining committee, examiners and assistant examiners, based on direct observations made during the marking period. Therefore, all teachers are encouraged to pay attention to the following suggestions in an effort to gain information which will help improve students' overall performance in subsequent examinations.

- Candidates are encouraged to read the examination questions carefully and follow instructions precisely, as valuable time can be wasted producing work that will not earn extra marks.

- Students must be encouraged to take both aspects of the SBA (the written assignment and the practical project) very seriously as the SBA accounts for a large portion of the overall marks in the Building Technology examination. For more information on the importance of this aspect of the examination see pages 7–9 of the amendment to the Industrial Technology syllabus which is placed after page 134 of the Industrial Technology Syllabuses of May/June 2002.

- Students should be given opportunities to produce more detailed sectional sketches so as to assist in improving their knowledge and understanding of vertical and horizontal sections of buildings and building components.

- Staircase details, design (stair calculations) and construction require serious attention. In this regard, it is suggested that teaching aids be used (for example, models and charts should be displayed in the laboratories/workshops depicting different types of stairs, building regulations pertaining to stairs and labelled sectional sketches of stairs (both wooden and concrete))

- Where possible, students should practise setting out buildings of different shapes both on flat and sloping sites on the school's campus if no other site can be found.

- Where possible, field trips should be organized to a cement plant and other manufacturing plants related to the construction industry. Plastic, for example, is a widely used material in the construction industry. Most plumbing pipes and a wide range of fittings (for example, electrical conduits and concrete forms) are made of plastic. Teachers should therefore expose students to these materials.

- The theory and practice related to types of floor finishes should be taught.

- Students must be constantly reminded that all sketches must be labelled as marks are always awarded for labelling.

- Charts showing different types of brick bonds should be displayed in the lab/workshop.

- Sanitary appliances, plumbing fixtures, drainage and sewage disposal are very important to the overall functioning of buildings. Therefore, the relevant sections of the syllabus which deal with these must be covered thoroughly.

- Most communities in the Caribbean have historic buildings in existence. They are either of timber or brick construction. Students should be encouraged to visit them and observe their architectural design, main features and so on. Recommendations 10 and 11 will enable candidates to improve their responses to questions in Section C of the examination paper.

- Particular attention should be paid to Question 1 on Paper 02 .This question is worth 40 marks and usually requires candidates to produce a number of detailed sketches. Candidates who are not skilled at sketching are likely to find this question very challenging. Therefore, teachers are encouraged to provide students with opportunities/activities to help them develop their sketching skills. Teachers are reminded to encourage students that only Question 1 should be done on the drawing paper provided for the examination. All other questions must be done in the answer booklet.

- Since scale drawing is no longer required, teachers should remind candidates that well-proportioned sketches should be produced. Additionally, candidates must acquire a good knowledge of construction details of both wooden and concrete structures in order to perform well on Question 1.

- Where a section of the syllabus proves to be beyond the delivery capabilities of the teacher, it is suggested that he/she solicit the help of resource persons to assist. This is especially important when the section contains hands-on practical work.

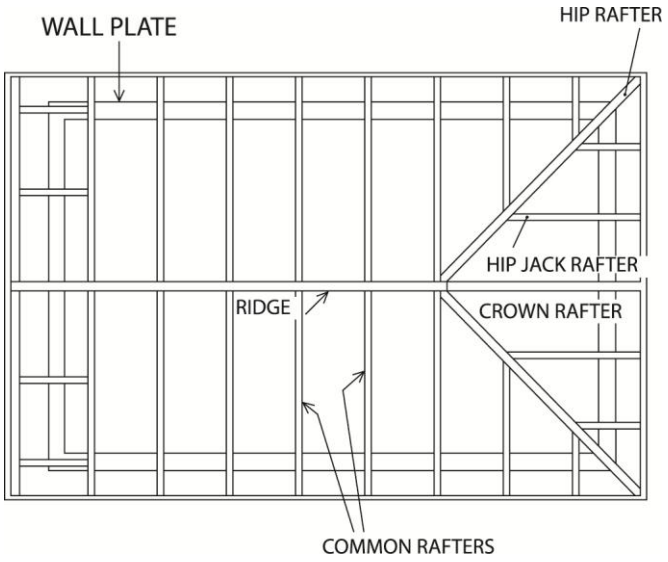
Appendix 1

Section A

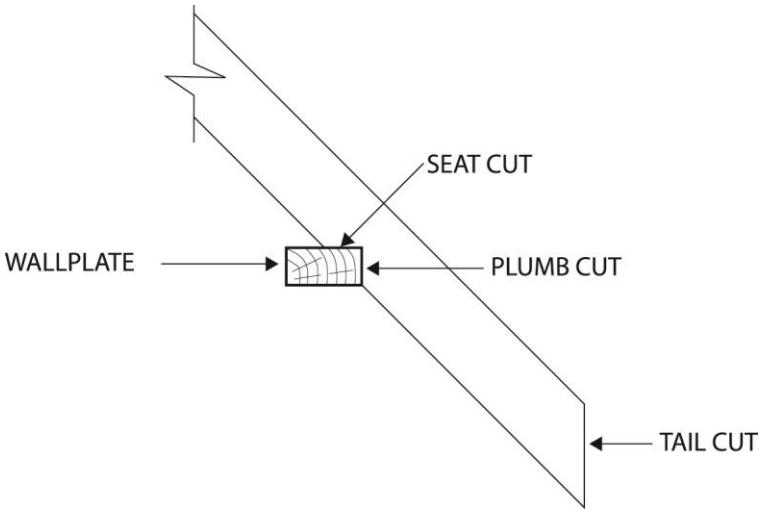
Sample Response to Question 1

(a) Arrangement of roof members

(b) Names of five roof members



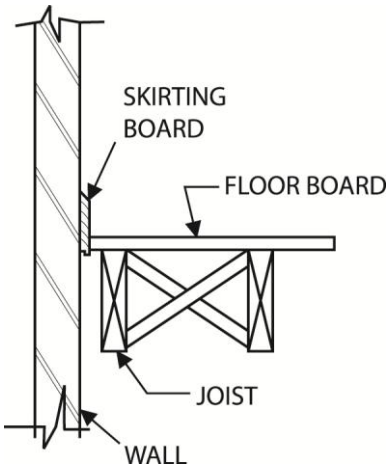
(c) Rafter correctly fixed to wall plate



(d) Different types of roof coverings

(i) Shingle
(ii) Corrugated metal sheets
(iii) Asphalt sheeting
(iv) Roofing tiles

(e) Vertical section at B-B with labels



(f) (i) & (ii) Parts of the stair in Figure 1 and description of parts

Riser — vertical member of a step
Tread — the horizontal surface of a step
String — the side support for a flight of wooden stairs
Baluster — in-fill member between the handrail and string
Handrail — an incline balustrade member at the top of balusters
Newel post — the main support for the handrail at each end of a flight

(f) (iii) Building regulations for stairs

220 mm — minimum width of tread
2000 mm — minimum height of headroom
100 mm — space allowed between balusters

Appendix 2

Section B

Sample Response to Question 2

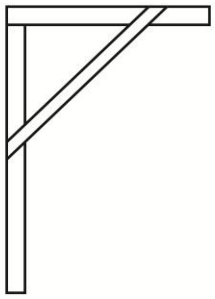
(a) Factors that must be considered when selecting a building site
Location
Accessibility
Cost
Topography

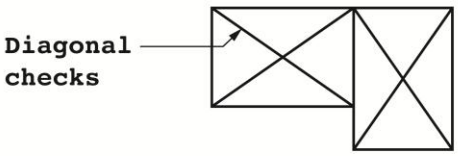
(b) Reasons for stripping a building site
Prevent the growth of vegetation
Reduce instability of top soil
Remove tree stumps

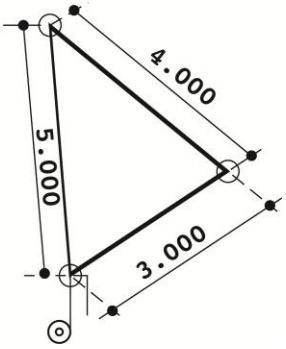
(c) (i) & (ii) Reasons for hoarding a building site and explanations
Public protection — keep outside persons away from site activities
Material/equipment protection — to reduce theft
Security — to ensure workers are safe
Reducing vandalism — prevent persons destroying work done on the site

(d) Methods of checking accuracy of 90º corners

Builder's square







Appendix 3

Sample Response to Question 3

(a) Definitions

Concrete — a mixture of sand, gravel/crushed stones, cement and water
Mortar — a mixture of sand, cement and water

(b) Characteristics of aggregates used for making concrete

They must be strong
Sound
Well graded
Angular shaped

(c) Benefits derived from *proportioning* or *batching*

Good water/cement ratio resulting in very strong concrete
Reduction of waste — financial savings
Reduces shrinkage
Water tightness is achieved — this reduces bleeding when trowelling

(d) Uses of plastics in the building construction industry

Conduits
DPM
Tiles — floor and roof
Guttering/downpipes

(e) Types of natural defects in timber


Star shake


Cup shake

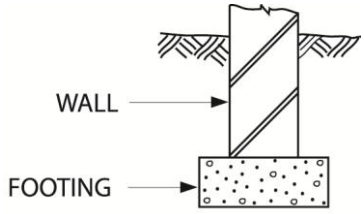
Appendix 4

Sample Response to Question 4

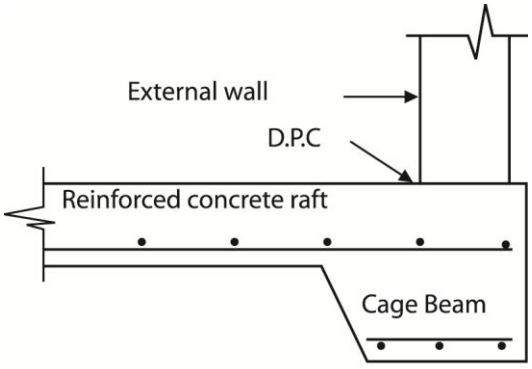
(a) Function of foundations

Distribution of loads
Anchoring the building
Help stabilize the building

(b) (i) & (ii) Sectional sketches of strip and raft foundations

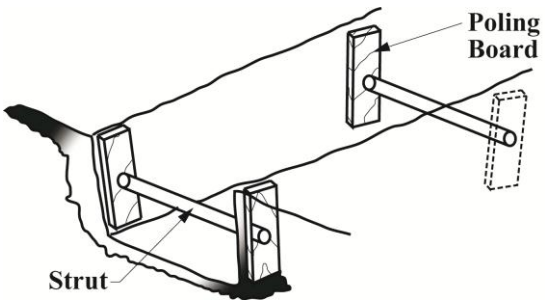


SIMPLE STRIP FOUNDATION



Raft Foundation

(c) Timbering in firm soil



(d) Function of timbering

To provide temporary support to the sides of excavation/trenches to prevent collapse of the sides

(e) Methods of moist curing

Ponding
Spraying
Sand bagging
Covering with plastic sheets

(f) The first three steps of the slump test

1. Place the slump cone on a flat base and put the mixed concrete in the cone.
2. Pack it down layer by layer with a tamping rod until the cone is full.
3. Level the top with a trowel.

Appendix 5

Sample Response to Question 5

(a) Function of external walls

Enclosing of space
Protection from the elements/weather
Supporting roofs and upper floors
Act as a sound barrier
Security

(b) (i) Definition of the term *bonding*

Bonding is a method used for joining brick/blocks in walls to avoid continuous vertical joints.

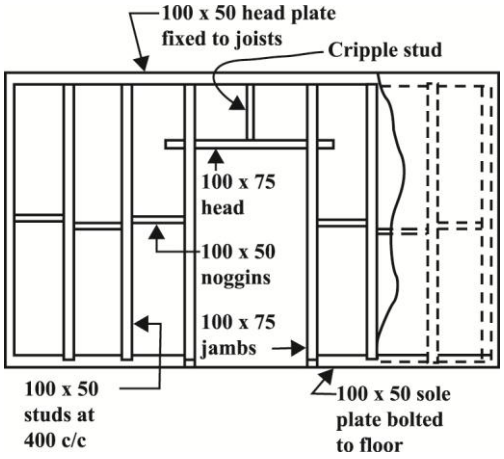
(ii) Importance of *bonding*

Bonding is important because it ensures that imposed loads are evenly distributed throughout a wall.

(c) Name of brick bonds

English bond
Flemish bond
Stretcher/common or running bond
Rat-trap bond

(d) Stud partition with door opening incorporated



Appendix 6

Sample Response to Question 6

(a) Function of doors

Privacy
Security
Light admission
Access/exit
Protection from the elements

(b) Function of floors

Structural stability
Hardwearing surface
Fire resistance
Aesthetic appearance
Stable base

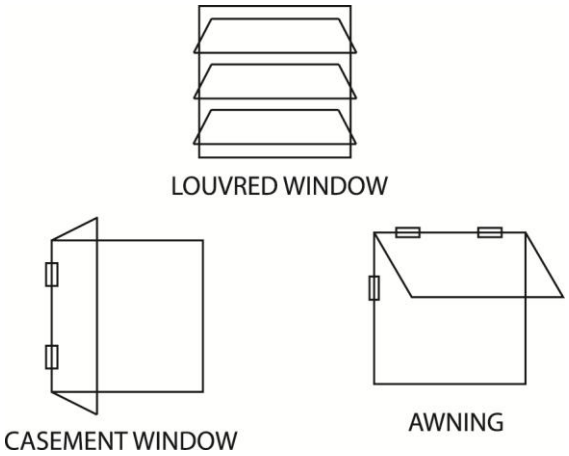
(c) Members of timber floors

Wall plate
Joist
Floor boards
Skirting board

(d) Function of floor members

Wall plate — supports the ends of the joist
Joist (common) — main supporting members of a floor
Floor boards — form the base of the surface of the floor
Skirting board — conceals the gap between the wall and the floor

(e) Sketches of different types of windows



(f) Correct sequence to follow when applying varnish to a new door surface

Clean the surface of the door
Apply sanding sealer
Sand the surface with a fine sand paper
Clean the surfaces
Apply coat of varnish

Appendix 7

Sample Response to Question 7

(a) (i) and (ii) Five building trades and the main function of each

Carpenter — erecting structural framework, constructing roofs, builds formwork, do setting out.

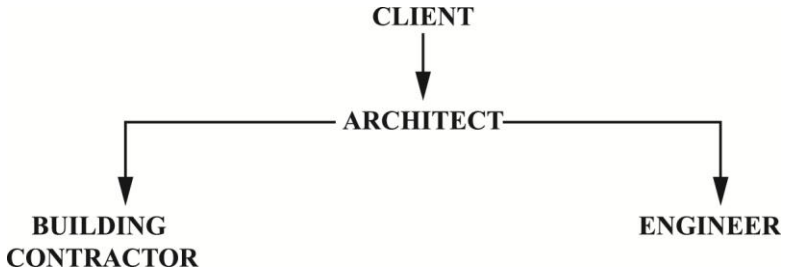
Mason — works with concrete and mortar to cast floors, pavements, lay concrete blocks, plaster walls and build stone walls.

Electrician — carries out wiring works, installation of conduits and fixtures

Plumber — lays pipes, install taps, toilet bowls, etc.

Painter — responsible for finishing the building by applying paint, wall paper, etc.

(b) (i) Flow chart showing members of the building team and their line of authority on a building site



(ii) Function of the members of the building team

Client — the person who commissions the work and directly or indirectly employs everybody on the project.

Architect — engaged by the client as his/her agent to design, advise and ensure that the project is kept within cost and complies with the design.

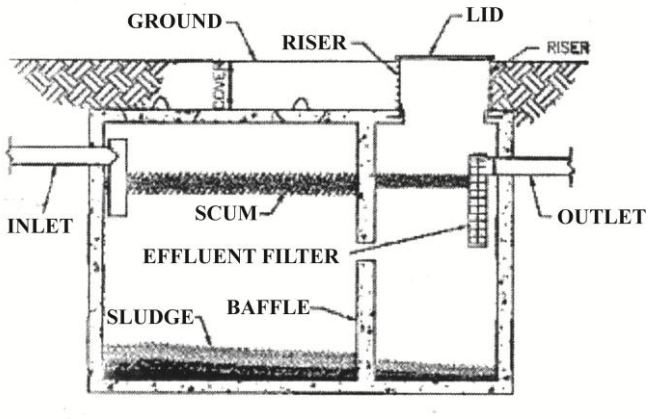
Building Contractor — employed by the client on the architect's advice to carry out the building works. He takes his instructions from the architect.

Engineer — a specialist such as a structural engineer employed to work with the architect on particular aspects of the design.

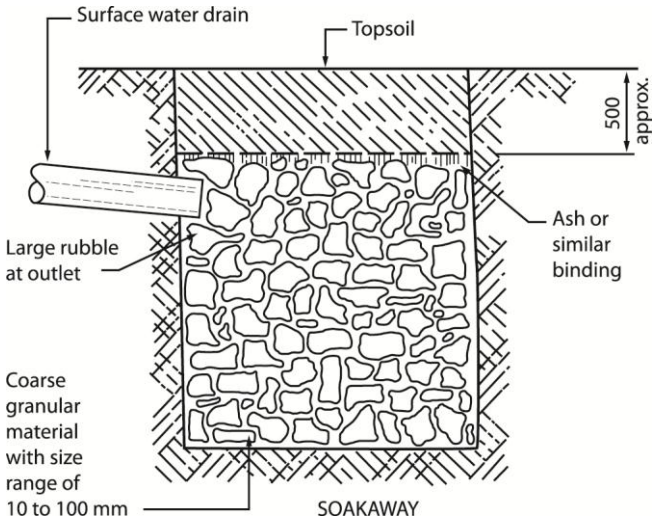
Appendix 8

Sample Response to Question 8

(a) (i) Vertical section of septic tank



(ii) Vertical section of soakaway



(b) Definition of drainage terms

Cesspool — an underground chamber constructed for the reception and storage of foul water from a building.

Surface water drains — drain designed to carry only surface water (rain water) rather than soil or waste. It removes water safely from the site.

Sewer pipe — pipe or closed channel that carries sewage.

Sewage — domestic waste matter that is carried away by water in a system of sewer drains/pipes.

Drain Pipe — pipe designed to carry waste water or sewage from a building.

Appendix 9

Sample Responses to Question 9

(a) (i) & (ii) Factors influencing the design of a building

History — history of the site: Is it prone to flooding or land slide? Is it built-up? What was its previous use?

Material — choice and availability of materials

Culture — would have an influence on the shape and style of the structure. Family custom

Climate — wet, hot, cold, windy, would determine where windows or balconies are placed in a building

Cost — determines affordability

(b) (i) European architectural features influencing building design in the Caribbean

Brickwork — walls made from bricks that are arranged in various patterns

Wooden casement — windows that have their sashes hanged to swing like doors

Steep roofs — these are pitched at 45º or more

Arches — curved member spanning openings to create a decorative feature

Staircases — built with decorative features such as balustrades to improve the interior of a building

(ii) Sketches illustrating European architectural features influencing building design in the Caribbean