CARIBBEAN EXAMINATIONS COUNCIL

REPORT ON CANDIDATES' WORK IN THE SECONDARY EDUCATION CERTIFICATE EXAMINATION

MAY/JUNE 2009

BUILDING TECHNOLOGY

OPTION II – CONSTRUCTION

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TECHNICAL PROFICIENCY EXAMINATION
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GENERAL COMMENTS

Candidates performed reasonably well on the practical projects of the SBA. However, the written assignment presented a challenge. There appears to be a degree of uncertainty on the part of teachers and candidates in terms of the exact format in which topics selected should be presented.

The candidates seemed knowledgeable on a wide range of topics in the syllabus, but were unable to apply that knowledge when required to do so on the application questions in Paper 02. The conclusion, therefore, is that adequate time must be allocated for practical work so that candidates can develop competencies that will allow them to improve their overall performance in the examination.

It is hoped that teachers will use the practical assignment to teach more of the related building principles, technologies and science inherent in the various modules of the syllabus.

DETAILED COMMENTS

Paper 01 – Multiple-Choice Questions

This paper consisted of a total of 60 multiple-choice items, which were based on all the theoretical aspects of the syllabus. Candidates responded reasonably well to most of the questions. However, candidates' responses to some of the questions clearly suggested that they were not adequately prepared for the examination. Teachers should note the units, specific objectives and related content indicated in the syllabus and use this to ensure that candidates are adequately prepared for this component of the examination.

Paper 02 – Structured Restricted-Response Essay Questions

This was a structured response paper with three sections described below. Each question received equal weighting for the profile dimensions, Knowledge and Application.

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

Section B — Five questions, worth 20 marks each and based on Modules D2 to D10 of the syllabus. Candidates were required to answer three questions.

Section C — Three questions worth 20 marks each and based on Modules D11 to D13 of the syllabus. Candidates were required to answer one question.

Suggested responses to all questions are provided in Appendix 1.

SECTION A

Question 1

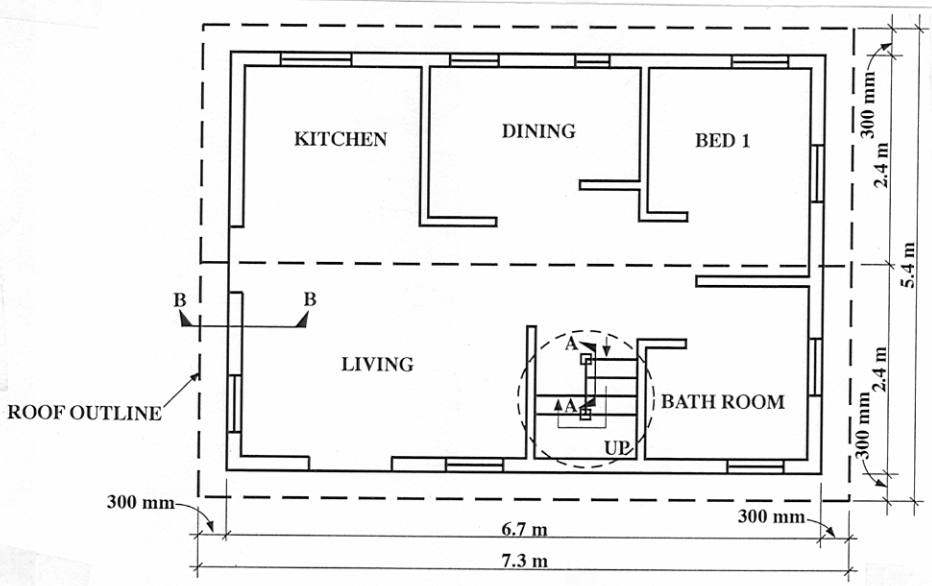


Figure 1

This question was a compulsory design question which comprised four parts and was designed to test the candidates' knowledge and understanding of best practices adopted in the construction industry when working on:

(i) Timber roofs

(ii) Timber upper floors

(iii) Timber staircases

(iv) Reinforced concrete floors on grade

Candidates were presented with a floor plan (Figure 1). Part (a) tested the candidates' understanding of the correct layout of the members of a gable roof to be covered with corrugated galvanized sheets. This part of the question required candidates to produce a labelled sketch of the plan view of a gable roof to show the framing arrangement required for the installation of corrugated galvanized sheets.

The candidates who were better prepared for the examination performed creditably. However, the weaker candidates found this question challenging. Candidates encountered difficulties in sketching, correctly arranging and labelling the roof members and differentiating between a sectional view and a plan view.

Part (b) of this question tested the candidates' knowledge of creating an opening in an upper/suspended timber floor. Candidates were asked to produce a neat sketch to show how a timber floor is trimmed to create an opening for a stairwell. This was generally well done. Part (c) tested the candidates' knowledge of the constructional techniques used to build timber stairs with housed strings (at section B-B on the plan view). Part (c) (i) required candidates to use a vertical section to show the connection between the risers and treads in a step and Part (c) (ii) required them to show how the tread and risers are connected to the strings. The candidates did not perform very well on Part (c) (ii). Perhaps the content related to construction of staircases is not being handled well at the school level. Candidates generally did not perform well on questions requiring detailed sketches. It was evident that they did not possess the required drawing knowledge and skills; hence they were not fully equipped for the examination.

Part (d) (details at A-A on the plan view) of the question was very well done. It required candidates to produce a sectional sketch to show details of the reinforced concrete floor slab on grade and identify by name the different parts.

SECTION B

Question 2

This question tested candidates' knowledge and understanding in the areas of:

(i) Site preparation

(ii) Basic site management and

(iii) Setting/Laying out of small buildings

Part (a) required candidates to state three factors to be considered when selecting a building site.

Part (b) asked the candidates to state four reasons for stripping a building site.

Part (c) required candidates to state four reasons for hoarding a building site and give/write brief explanatory notes on any three.

For Part (d), candidates were asked to make labelled sketches of two methods used in building construction to check for squareness when setting out a small building.

This was a very popular question and candidates performed very well on it.

Question 3

This question tested candidates' knowledge and understanding of different building materials and their uses in the construction industry (e.g. concrete, mortar and plastics).

Part (a) required candidates to define the terms, concrete and mortar. Generally the question was well done. However, the weaker candidates in their responses omitted cement and water.

Part (b) asked candidates to state four characteristics of coarse aggregates. This was very well done. Parts (c) and (d) required candidates to list five properties of plastics and list five uses of plastics in building construction, respectively. This part of the question was very well done.

Question 4

This question tested candidates' knowledge and understanding of foundations and methods of excavating trenches.

Part (a) required candidates to state three functions of foundations.

In Part (b), candidates were asked to produce labelled sketches of three different types of foundations.

Part (c) required candidates to explain two methods of excavation and name the tools/equipment required for each method. Candidates generally performed creditably on this question.

Question 5

This question tested the candidates' knowledge and understanding of doors and their construction.

In part (a), candidates were given the pictures of three different types of doors (Figure 2) and were asked to identify them by name. They were also asked to produce a labelled section at X-X of door 'C'. Most candidates were able to identify the doors but found the production of the section at X-X challenging.

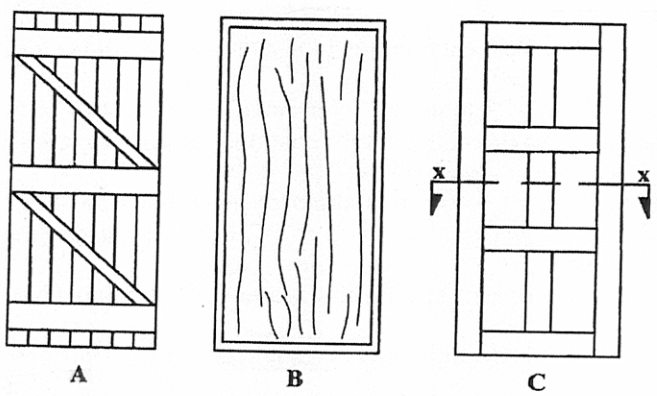
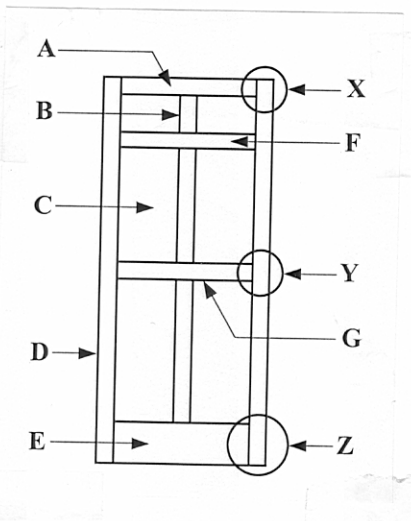


Figure 2

Part (b) (i) required candidates to identity the different parts of a six panel door (which was given in Figure 3).



Part (b) (ii) also related to Figure 3 and required the candidates to identify joints used at intersections X,Y and Z

Question 6

The question tested candidates' knowledge and understanding of finishing materials and their application.

Part (a) required candidates to name four ingredients used in the manufacturing of oil paints.

Part (b) required candidates to name the most appropriate type of paint for painting a masonry wall surface and to explain in sequence four steps involved in applying it.

Part (c) required the candidates to explain in correct sequence five steps required to finish a coffee table with clear varnish.

Part (d) required candidates to name six different types of floor finishes.

Section C

Question 7

This question tested candidates' knowledge and understanding of drainage systems.

For part (a) of the question, candidates were asked to use labelled sketches to illustrate a septic tank and a soak away.

For part (b) candidates were asked to describe a combined system of drainage and a separate drainage system.

Part (c) required candidates to state one advantage and one disadvantage of the two systems in Part (b).

Question 8

This question tested candidates' knowledge and understanding of the duties of members of the building team and building trades on a construction project.

Part (a) required the candidates to list five building trades and two jobs carried out by each trade. Part (b) asked candidates to arrange in sequence, the titles of seven members of the building team to show their line of authority on a building project and state the function of any three. This was a very popular question.

Question 9

This question tested candidates' knowledge and understanding of building features from Britain and the USA that have influenced building and designing in the Caribbean. It also tested the candidates' knowledge of factors that influence building design.

Part (a) required candidates to explain five factors that influence the design of a building.

Part (b) required candidates to state building features from Britain and the USA that have influenced building and designing in the Caribbean.