



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
C A R I B B E A N S E C O N D A R Y E D U C A T I O N C E R T I F I C A T E ®

INSTRUCTIONS TO SCHOOLS ON THE
SBA LABORATORY EXERCISES, WRITTEN AND
PRACTICAL COMPONENTS FOR INDUSTRIAL TECHNOLOGY
AND INDUSTRIAL ARTS

THE PRACTICAL COMPONENT

1. The laboratory exercises and practical projects in Building Technology, Electrical and Electronic Technology and Mechanical Engineering Technology are marked by a visiting examiner (Moderator) appointed by the Council. No Moderator is permitted to mark the work of students he has prepared for the examinations.
2. The Moderator will visit each school twice during the final year. On the first visit he/she will assess the **process** of constructing the practical project/laboratory exercise of EACH student or group of students. On the final visit he/she will reassess the completed project work (**product**) of a sample of FIVE students already marked by the teacher.

Note:

- The Moderator selects the sample based on the total SBA scores awarded by the teacher. To facilitate this, **the teacher must make a copy of his/her assessment on the Candidate's Record Sheet available to the Moderator.**
 - The Moderator has the **option** of requesting additional assignments for reassessment, if needed.
3. If the number of students scheduled for the laboratory session is larger than can be accommodated at one session, the Assessor may divide them into two or more groups. In such circumstances the second group will take the session as soon as possible after the first group is finished.
 4. Individual schools are responsible for providing and preparing materials for the laboratory exercises and practical projects for use by each student. The principal/Headteacher would have received well before the examination particulars of materials, apparatus, equipment, topics and mark schemes to be used by teachers and students.
 5. Individual schools are responsible for the retention of the lab-books and projects.
 6. On the Moderator's final visit the Principal or Teacher in-charge of the arrangements should ensure that a table or work-surface for the presentation of projects is provided.

THE WRITTEN COMPONENT

The written assignment will take the form of a report of about 1000 – 1200 words based on the common modules. These are:

Safety Health & Welfare
Introduction to Computer
Impact of Technology on Society

Candidates are to demonstrate their full understanding of the concepts relating to these modules. They should produce a report that uses word-processing technology. Candidates may also use other software packages (Spreadsheets or databases) to do any analysis that may be necessary to enhance the presentation of the report.

The report should be a critical analysis of a particular institution, business or theme that has relation or relevance to the **Unit(s) or Subject(s)** being studied. It is suggested that one of two approaches be used.

1. Industrial visits

Preparation of a report on a visit to an industry or industrial site.

2. A report on a particular theme that is relevant to the **Unit(s) or Subject(s)** being studied, for example,

- Transport – road, air, rail or water;
- Communication;
- Manufacturing;
- Service industry.

The report should include drawings, and photographs, wherever these are relevant, in addition to the written material. The report should address the areas listed below.

- The jobs or careers involved in the particular institution or theme that relate to the **Unit(s) or Subject(s)** being studied.
- The norms, regulations and codes of which employees in these areas must be aware and to which they must adhere, because of legal, financial, strategic or other considerations.
- The impact of technology on the careers identified and the processes involved as they relate to the **Unit(s) or Subject(s)** being studied, for example, employment vs unemployment, self-employment, security considerations, methods of processing and environmental considerations.
- Ethical and moral considerations. A critical look at the environmental issues, employment practices and safety, health and welfare issues as they are addressed.

3. If the candidate is studying:
- (i) one Unit or Subject only, the report should address the areas listed in point 2 above which are relevant to that Unit only.
 - (ii) two or more Units or Subjects, the report should address the areas listed in point 2 above which are relevant to **ALL** the Units being studied.

Mark Schemes for Written Assignment

HEADING	Marks per Unit or Subject		
	1	2	3
INTRODUCTION	2	2	2
CONTENT			
Careers, norms, regulations and codes	3	2	2
Impact of technology	3	3	3
Ethical and moral considerations	3	2	2
PRESENTATION	9	7	7
SUMMARY	3	2	2
COMMUNICATION OF INFORMATION	7	12	12
TOTAL	30	30	30

MECHANICAL ENGINEERING TECHNOLOGY
Further Breakdown of Criteria for Mark Scheme for
Written Assignment and Marks Allocated

CRITERIA	MARK	TOTAL MARK
INTRODUCTION		2
• Topic outlined briefly	1	
• Methods or approach at data collection/handling	1	
CONTENT		7
• Identifies		
1. careers	1	
2. norms/regulations/codes	1	
• Impact of technology on careers		
1. Employment/unemployment	1	
2. Security or Processing	1	
3. Environmental	1	
• How ethical and moral considerations are addressed		
1. Legal policies on safety health and welfare	1	
2. Moral approaches to handling safety health and welfare issues	1	
PRESENTATION		7
• Data presentation		
Use of appropriate		
1. tables/charts/diagrams	1	
2. photographs	1	
• Word-processing format		
Use of appropriate		
1. title/headings and subheadings	1	
2. line spacing	1	
3. margins and justification	1	
4. fonts		
a) headings and subheadings	1	
b) size and colour	1	
SUMMARY		2
• Major findings	1	
• Recommendations	1	
COMMUNICATION OF INFORMATION		12
• communicates information in a logical way using correct grammar and appropriate jargon of the field All of the time	10 - 12	
• communicates information in a logical way using correct grammar and appropriate jargon of the field MOST of the time	7 - 9	
• communicates information in a logical way using correct grammar and appropriate jargon of the field SOME of the time	4 - 6	
• communicates information in a logical way using correct grammar and appropriate jargon of the field RARELY	1 - 3	
TOTAL		30

IMPACT OF TECHNOLOGY ON SOCIETY

SPECIFIC OBJECTIVES	CONTENT
<p>The student should be able to:</p> <ol style="list-style-type: none"> 1. list and identify opportunities or situations in his/her community or territory that may lead to employment or self employment in Industrial Technology or related fields; 2. demonstrate knowledge of business norms, regulations and codes; 3. source information on career opportunities in Industrial Technology (Building-Woods, Construction; Electrical and Electronic, Mechanical Engineering) 4. prepare and write report or short paper on Technology in Industry; 5. prepare and write report or short paper on innovations in the field of Engineering; 6. prepare and write report or short paper on engineers, inventors or educators who have made significant contributions to society; 7. demonstrate appreciation of societal issues raised by technology. 	<p>Fields: Electrical or Electronic Engineering; Mechanical or Production Engineering; Civil or Construction Engineering; Industrial Engineering.</p> <p>Industrial or plant maintenance jobs.</p> <p>Trade or business regulations, norms or codes. Manuals, professional associations. Legal and strategic requirements. Financial transactions – sources and procedures, contracts and agreements.</p> <p>Newspapers; professional journals or organizations; and specifically the Internet.</p> <p>Observational visits to multinational, regional, national engineering and service companies.</p> <p>Use of the computer in engineering.</p> <p>Great inventors and engineers.</p> <p>Ethical and moral issues; impact of technology on employment, entrepreneurship, self-employment; environmental issues: ecological balance and imbalance.</p>

THE PRACTICAL EXAMINATION IN TECHNICAL DRAWING

1. The practical examinations in Technical Drawing at Basic and General Proficiency are returned to the Council for assessment by the Examining Team.
2. Special drawing paper is provided by the Council.
3. Drawing boards/drawing instruments are to be provided by schools/centres; candidates may however use their own.
4. The recommended hardware and software for Computer Aided Drafting are to be provided by schools/centres.

ADMINISTRATION

5. The room in which the examination is to be held must be properly arranged in advance and the Principal or Teacher in charge of the arrangements should ensure that:
 - (i) drawing boards/drawing instruments are in good working order and sufficient in quantity;
 - (ii) a clock is placed in such a position that it can be clearly seen by all the candidates;
 - (iii) all teaching aids and illustrative materials normally displayed in the room have been removed or concealed;
 - (iv) there is minimum interference by other students or outsiders.

SBA SAMPLES

All centres presenting candidates for the examinations must submit samples of the projects produced by the candidates for the SBA components of the examination. The sample should constitute the work of FIVE candidates within the mark range as follows:

- (i) the top candidate
- (ii) the middle candidate
- (iii) the bottom candidate
- (iv) the candidate halfway between the 'top' and 'middle'
- (v) the candidate halfway between the 'middle' and 'bottom'

CANDIDATES TO BE ASSESSED AT SCHOOL/CENTRE OTHER THAN THEIR OWN

1. The samples selected by the Principal must be labelled with the candidates' registration numbers.
2. The samples must be carefully packaged.
3. The Local Registrar and the Principals of the centres should agree on suitable arrangements for ensuring that the projects are available to the Assessor on the day of the scheduled visit to the school and returned to the school afterwards.

CANDIDATES TO BE ASSESSED AT THEIR OWN SCHOOL/CENTRE

1. The samples selected by the Principal must be labelled with the candidates' registration numbers.
2. On the day of the scheduled visit, the samples and Plan Sheets must be presented to the Assessor for remarking.
3. The samples must be left with the Principal at the end of the inspection.

The Registry

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