

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

June 2004

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK : 70

SYLLABUS/COMPONENT : 0418/03

INFORMATION TECHNOLOGY

Printout of the second e-mail prepared and ready to send to autoresponder-

Check send to address: **design.h@ucles.org.uk**

Check subject line **ICTCOREX**

Check for attachment present **SCA4MANU.TXT**

If candidate has attached file SCA4POP.CSV instead of SCA4MANU.TXT then allow this

Marks to be deducted if incorrect:

address (1 mark) 1.2.1

subject (1 mark) 1.2.1

attachment (1 mark) 1.3.1

Email printed (1 mark) 11.1.1

<Candidate Name>

Name top left of page
Must be in the header

Date top right of page
Must be in the header

<today's date>

A4 page size
Landscape
All margins 4 cm

Allow for paper feed inconsistencies with printers –
(the line length must be between 21.5 and 22 cm)

Heading inserted
Centre aligned
18 point, underscored
Different font to body text

Proposed Manufacturing Plant

As you are already aware, Hothouse Design has been contracted to produce a location of industry study for the multi-national chemical company Quattichem. The information provided within the brief has identified an initial short-list of 52 countries. These countries have been listed by Quattichem as those which they feel may provide for the right sort of corporate investment, given their other plants and holdings around the world. Since the initial list was submitted the project manager has received a further three areas to be added to the list, these being Thailand, Trinidad and Tobago, and Uruguay.

The dry raw materials for the two processes involved are to be sourced from Thailand, Indonesia, South Africa and Switzerland. The final location must have easy access for bulk transport of these raw materials to the plant, and for the end product (which will be in bulk powder form) from the plant. The other major raw material will be heavy crude oil, which can be sourced anywhere globally but must be available in relatively large quantities (approximately 6000 barrels a day). Other locational factors:

Marks to be deducted if incorrect:

Page break (1) 5.4.1
Bullet points present (1) 5.2.1
Bullet points indented (1) 5.1.1

- availability of water
- good transport links
- remote location
- 60000-hectare site

Marks to be deducted if incorrect:

Document Present (1) 11.1.1
Document Complete with paragraphing intact (1)

Marks to be deducted if incorrect:

name top left (1) 4.1.6
date top right (1) 4.1.6
heading inserted (1) 3.2.1
centre align (1) 4.1.6
18 point (1) 5.5.1
underlined (1)
different font (1)
A4 page size (1) 4.1.1
landscape (1) 4.1.2
margins (1) 4.1.4

Page break inserted here

Bullet points
Indented at least 3cm
Accept if start of text indented by 3cm from margin

Page numbering bottom left
Must be in the footer

The location must be remote from any centres of population. There must be a relatively flat area of land in excess of 60000 hectares which must not contain a habitat for any protected species of flora or fauna. Quattichem were explicit about this point at our initial meeting as they wish to try and develop an eco-friendly site, a strategy that they intend to use as part of their advertising campaigns for their product. There will be a requirement for a large quantity of natural water which will be used in the cooling processes. Approximately 20000 hectares of the site will be set aside to allow this water to cool back to the natural ambient temperature, before it is returned to the locality.

The cooling process could be used for the generation of electricity; this could provide an opportunity to create a working partnership with the government of the chosen location, to provide them with cheap electricity for the first 20 years of operation - Quattichem will need some form of incentive for the government concerned as the processes involved could be perceived as being dangerous. After the construction stage there would be few long term employment prospects as the plant will be almost fully automated. These are the estimated employment requirements:

The construction of the site will require only 12 professionals. The other workforce, (see the estimates above) could be provided from the communities in the region. This again would provide a good incentive for the country that is selected to host this facility. One factor which must be of prime importance is the selection of a region that is free from earth movements, earthquakes and any volcanic activity.

During the most recent meeting with the company, we had the distinct impression that a country in either America or the West Indies could be the favoured option of Quattichem's managing director, and with this in mind, it may be worth investigating

Marks to be deducted if incorrect:

fully justified (1) 4.1.6
12 point (1) 5.5.1
single line spacing (1) 4.1.5
applied to all paragraphs (1) 4.1.5

Body text fully justified
12 point
Single line spacing

this are first. Here are the details of all the short-listed countries in that region with a population of under 3.5 million people:

Take these details and investigate the possible locations that could provide a solution for Quattichem. For each location we need to evaluate the physical Geography of the location, existing transportation links and the potential for new transportation links, proximity of population centres, climate, political structures and stability, as well as the other requirements mentioned above. Please identify in these reports your estimated costs for providing the necessary infrastructure to this location (not including the cost of building the plant). Please identify any potential problems with selecting this location, even if they have not been identified in any of the notes within this document or from the briefing meeting. This will probably be the most critical factor in your report.

Please note that some of our competitors have also been contracted to produce reports on the suitable locations for this manufacturing plant. The long-term benefits of selecting the most appropriate site and winning future contracts for the development of this site could well generate Hothouse Design a future income in excess of 23 million US dollars. Needless to say, confidentiality is of the utmost importance while you are working on this report.

Marks to be deducted if incorrect:

Automated page numbering on all pages (1) 4.1.3
Placement of numbers (1) 4.1.3

Page orientation portrait

Heading 'High population countries' at the top
Does not have to be in the header and any alignment is acceptable

High population countries

Marks to be deducted if incorrect:
Page orientation (1) 9.1.3
Heading 100% correct (1) 9.1.2

Country	Region	Population	Density	Energy	Imports	Exports
Australia	Oceania	18.4	2	7.61	3342	2942
Belgium	Europe	10.2	335	6.86	14702	16078
Canada	America	30.2	3	11.21	5676	6491
Chile	America	14.7	20	1.45	1121	1130
Czech Rep.	Europe	10.5	136	4.97	2450	2099
France	Europe	58.8	107	5.15	4763	4941
Germany	Europe	82.3	236	5.48	5445	6227
Greece	Europe	10.6	82	3.22	2056	899
Hungary	Europe	10.2	110	3.27	1472	1217
Italy	Europe	57.8	196	3.95	3562	4038
Japan	Asia	125.9	334	4.98	2684	3540
Malaysia	Asia	20.9	64	2.29	3751	3563
Netherlands	Europe	15.9	469	7.22	11419	12680
Poland	Europe	38.8	127	3.51	753	593
Portugal	Europe	10.1	110	2.13	3261	2280
South Africa	Africa	42.3	35	2.73	718	653
South Korea	Asia	46.1	466	3.77	3013	2788
Spain	Europe	39.3	79	3.01	2890	2334
Taiwan	Asia	21.7	603	2.5	4868	5238
Thailand	Asia	60.8	119	1.07	1236	946
United Kingdom	Europe	58.6	243	5.33	4527	4130
United States	America	268	28	11.39	2929	2222

Sorted in ascending order on 'Country'

Search
Population > 10

Marks to be deducted if incorrect:
All fields fully visible (1) 9.1.1
Search (2) 8.2.1
Sort (2) 8.1.1

Marks to be deducted if incorrect:
Evidence that data file is present (1) 6.1.1

24 November 2002

Candidate's name

Marks to be deducted if incorrect:
Position of name (1) 9.1.3

Name bottom right of report
Does not have to be at bottom of the page

Asia - densely populated

Marks to be deducted if incorrect:
 Heading 100% correct (1) 9.1.2

Heading 'Asia – densely populated' at the top
 Does not have to be in the header
 and any alignment is acceptable

Only these 4 fields selected
 Can be any order or layout

Density	Country	Region	Energy
5246	Singapore	Asia	9.67
603	Taiwan	Asia	2.5
466	South Korea	Asia	3.77
334	Japan	Asia	4.98
119	Thailand	Asia	1.07
			4.398

Search
 Density > 100 AND Region = Asia

Check data entry of Thailand
 Must be 100% accurate

Calculated Field
 Average Energy calculated

Sorted in descending order on 'Density'

Marks to be deducted if incorrect:

- 4 fields fully visible (1) 9.1.1
- search (2) 8.2.1
- Sort (2) 8.1.1
- Calculated control correct. Any number of decimal places (2) 7.1.1
- Position of calculated control below energy column (1) 9.1.3
- Data entry for Thailand 100% correct (1)

Name bottom left of report
 Does not have to be at bottom of the page

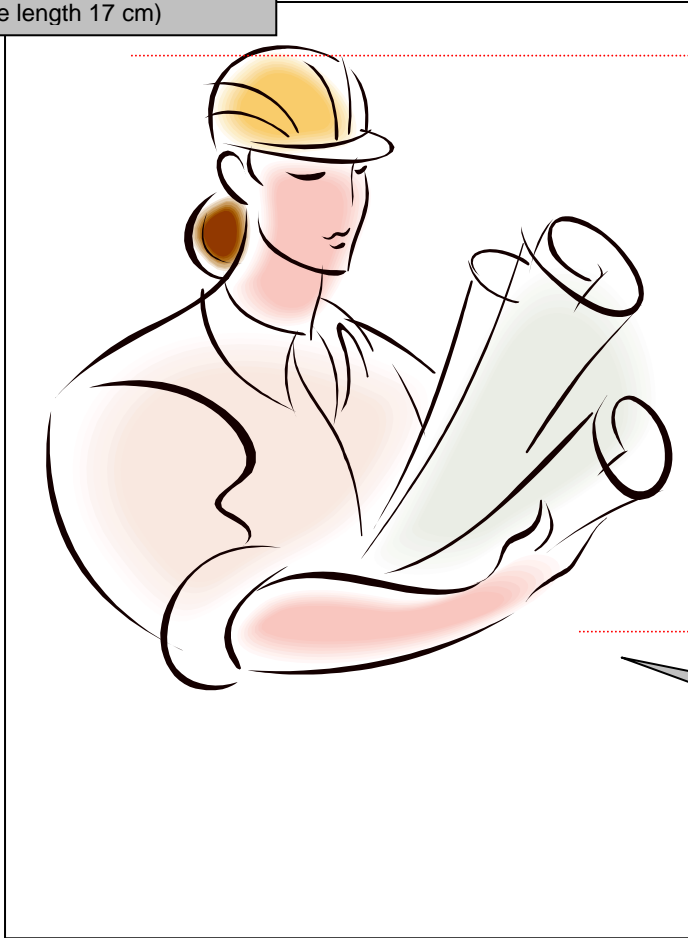
Marks to be deducted if incorrect:
 Name position (1) 9.1.3

Candidate's name

A4 page size - Portrait
All margins 2 cm
Allow for paper feed
inconsistencies with printers –
(the line length 17 cm)

Proposed Manufacturing Plant

Heading present
Any alignment, font
or point size, is acceptable



As you are already aware, Hothouse

Design has been contracted to

Marks to be deducted if incorrect:
Page orientation (1) 4.1.2
Margins (1) 4.1.4

chemical company Quattichem. The information provided within the brief has identified an initial short-list of 52 countries. These countries have been listed by Quattichem as those which they feel

may provide for corporate investment in other plants the world. S

Marks to be deducted if incorrect:
Image inserted (1) 10.1.1
Placement (1) 3.3.2
Scaling (1) 3.3.2
Text wrap (1) 3.3.2

was submitted the project manager

received a further three areas

Image of any building inserted
It may contain construction, planning, tools etc
Placed top left of page
Graphic area no more than 40% of printed page and no less than 15% of page
Orientation of graphic not important
Text must wrap around all the image

processes involved are to be sourced from Thailand, Indonesia, South Africa and Switzerland. The final location must have easy access for bulk transport of these raw materials to the plant, and for the end product (which will be in bulk powder form) from the plant. The other major raw material will be heavy crude oil, which can be sourced anywhere globally but must be available in relatively large quantities (approximately 6000 barrels a day). Other locational factors:

- availability of water
- good transport links
- remote location
- 60000-hectare site

Marks to be deducted if incorrect:
Text left aligned (1) 4.1.6
10 point (1) 5.5.1
1.5 line spacing (1) 4.1.5
applied to all paragraphs (1) 4.1.5
page break removed (1) 5.4.1

Page break removed

The location must be remote from any centres of population. There must be a relatively flat area of land in excess of 60000 hectares which must not contain a habitat for any protected species of flora or fauna. Quattichem were explicit about this point at our initial meeting as they wish to try and develop an eco-friendly site, a strategy that they intend to use as part of the advertising campaigns for their product. There will be a requirement for a large quantity of natural water which will be used in

Marks to be deducted if incorrect
Page numbering moved (1) 4.1.3

Page numbering moved to bottom right
Does not have to be in the footer

<Candidates Name>

<today's Date>

20000 hectares of the site will be set aside to allow this water to cool back to the natural ambient temperature, before it is returned to the locality.

The cooling process could be used for the generation of electricity; this could provide an opportunity to create a working partnership with the government of the chosen location, to provide them with cheap electricity for the first 20 years of operation - Quattichem will need some form of incentive for the government concerned as the processes involved could be perceived as being dangerous. After the construction stage there are prospects as the plant will be almost fully automated and employment requirements:

Marks to be deducted if incorrect:
Table inserted in correct place (1) 5.3.1
5 rows and 3 columns (1) 5.3.1
data entry (1) 3.2.1

Phase	Employed	Number
Construction	Local	750
Construction	External	12
Operation	Local	30
Operation	External	32

Table inserted here
100% accuracy in data entry needed
Any alignment acceptable

... require only 12 professionals. The other (above) could be provided from the communities in the region. This again would provide a good incentive for the country that is selected to host this facility. One factor which must be of prime importance is the selection of a region that is free from any volcanic activity.

Marks to be deducted if incorrect
Placing of extract (1) 10.1.1
Search (2) 8.2.1
4 fields displayed (1) 9.1.1
Data entry for Uruguay 100% correct (1) 6.2.1
Data entry for T&T 100% correct (1) 6.2.1

During the most recent meeting it was decided that a country in either America or the Caribbean would be investigated. This was the decision of Quattichem's managing director, and with this in mind the first step was to investigate this are first. Here are the details of countries in that region with a population of under 5 million people.

Database extract placed here
Format of the extract is not important

Country	Region	Population	Density
Uruguay	America	3.3	19
Bahamas	West Indies	0.3	28
Barbados	West Indies	0.3	616
Jamaica	West Indies	2.6	240
Panama	America	2.7	37
Trinidad and Tobago	West Indies	1.3	235

Searching for
'Region' America or West Indies
AND 'Population' < 3.5

Check data entry of two records for
Trinidad and Tobago and Uruguay
Must be 100% accurate

Take these details and investigate the possible locations that could provide a solution for Quattichem. For each location we need to know the Geography of the location, existing transportation links, new transportation links, proximity of population centres, climate, political

Only these 4 fields selected
Can be arranged in any order or layout

<Candidates Name>

<today's Date>

structures and stability, as well as the other requirements mentioned above.

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Check for no widows, orphans or lists or tables which overlap two pages

Marks to be deducted if incorrect

No widows or orphans (1) 5.4.1

No split lists (1) 5.4.1

No split tables (1) 5.4.1

Marks to be deducted if incorrect:

Document Complete and spell checked with paragraphing intact (1)