

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

Cambridge International Diploma Standard Level

MARK SCHEME for the 2004 question paper

CAMBRIDGE INTERNATIONAL DIPLOMA IN ICT

5191 Core, maximum mark 100

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which Examiners were initially instructed to award marks. They do not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

- CIE will not enter into discussion or correspondence in connection with these mark schemes.

2004

CAMBRIDGE INTERNATIONAL DIPLOMA
Standard Level

MARK SCHEME

MAXIMUM MARK: 100

PAPER: 5191/A

ICT (Core)

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

<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)

Proposed Manufacturing Plant

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

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:

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

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

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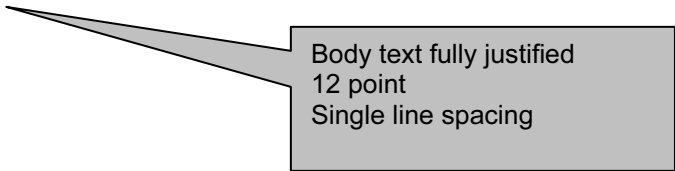
Page 3

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



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.

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

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

24 November 2002

Candidate's name

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Does not have to be at bottom of the page

Page N

Asia - densely populated

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'

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Does not have to be at bottom of the page

Candidate's name

Page 1 of 1

Page N

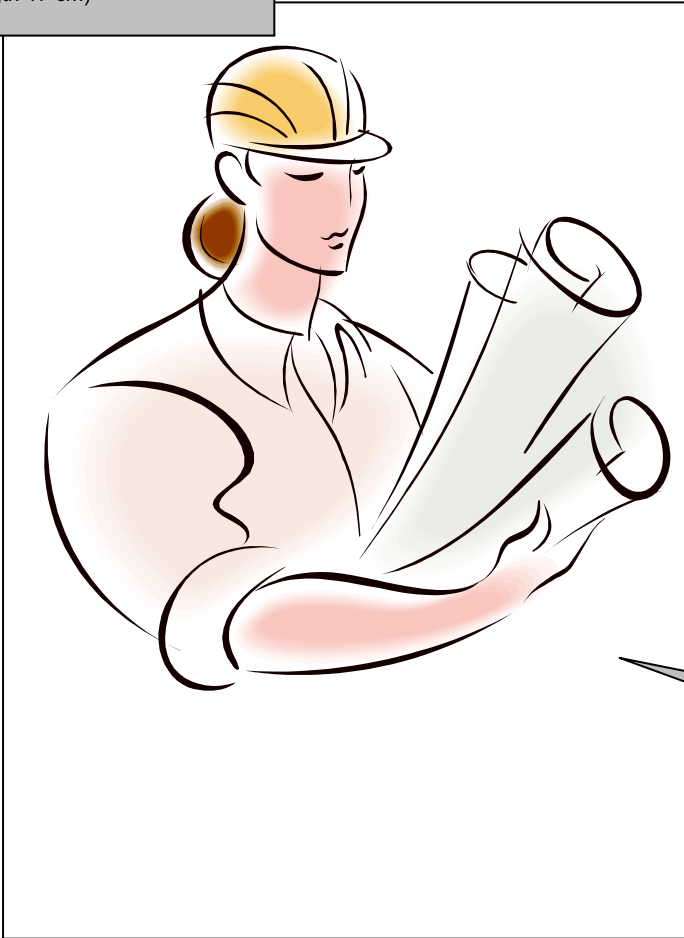
<Candidates Name>

<today's Date>

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 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 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

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

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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 would be few long term employment prospects as the plant will be almost fully automated. These are the estimated employment requirements:

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 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 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 location that could provide a solution for Quattichem. For each location we need Geography of the location, existing transportation 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. 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.

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

2004

CAMBRIDGE INTERNATIONAL DIPLOMA
Standard Level

MARK SCHEME

MAXIMUM MARK: 100

PAPER: 5191/B

ICT (Core)

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 **SCB4MANU.TXT**
If candidate has attached file **SCB4AFR.CSV** instead of SCB4MANU.TXT then allow this

Candidate x

Name top left of page
must be in the header

Date top right of page
must be in the header

18/03/05

A4 page size - Landscape
All margins 3 cm
Allow for paper feed inconsistencies with printers –
(the line length must be between 22.5 and 23 cm)

Quattichem – Phase 2

Heading - Centre aligned
24 point, underscored
Different font to body text

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 initial information identified a short list of 52 countries located globally, but over the space of the last two weeks the company has decided to focus on a country within a specified region. The board of Quattichem have decided, for a variety of cultural, political and economic reasons (after viewing their other plants and holdings around the world) to commission us to investigate some of the countries within Africa as potential sites. They have provided a list of thirty nine countries that they felt were worth investigation for this project. Since the list was initially provided, they have also added Botswana, Gabon and Swaziland.

Some of the team undertaking this project may have been involved in the initial feasibility study for Quattichem. They have taken many of the points raised in that study and offered those back to Hothouse for further development. I would like to thank the initial team for the thoroughness of their work at that stage. The team's effort and enthusiasm undoubtedly led to Hothouse obtaining this contract and the exclusion of all but one competitor at this stage.

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must be in the footer

Page 3

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 location factors:

- economic factors
- political stability
- availability of water
- good transport links

Bullet points
Indented at least 4cm
Accept if start of text indented by 4cm from margin

As in the initial study the same locational factors will be relevant. The location must be remote from any centres of population. It must be on 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 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 team working on this project will be split into two. David will lead the overall development and with his colleagues, will collect and collate all the relevant information about all countries on the given list (which must include those mentioned above). Sofia's team will focus on those countries where annual Imports are greater than 100 AND less than 500 and with the Exports less than 50. The starting point for this team will be the following countries:

Body text left aligned
12 point
Single line spacing

One factor which is of prime importance is the selection of a region that is free from earth movements, earthquakes and any volcanic activity. This means that Sofia's team must investigate which of the countries noted has no record of earthquakes or volcanic activity, as well as checking where tectonic plate boundaries lie within the continent. As climate will not be a factor affecting the running of the plant, the only consideration of this should be during the construction phase. These geographical factors were an area of focus for the Quattichem board when they commented upon the initial feasibility studies. Please ensure that these are highlighted at an early stage of the report.

David's team must also investigate in depth the political structures and stability of each country on the shortlist. This task must be undertaken with great sensitivity. The assistance that developing a plant like this could have to the economy of the region and country involved must also be considered. As mentioned earlier, the benefits of a relatively cheap and plentiful source of electricity would assist the country concerned. Quattichem have also asked us to investigate other methods of assisting the indigenous population in terms of developing specific areas. In order to do this I would like an initial grid developed for every region of each potential country which summarises key employment factors like this:

The initial grids and first draft of the report must be completed by next Friday. All team members will meet for a briefing at 9 o'clock on the following Monday in the conference room to discuss the next phase of the development of this report.

Page orientation portrait

Heading 'Low population' at the top

Does not have to be in the header and any alignment is acceptable

Low population

Country	Region	Population	Density	Energy	Imports	Exports
Botswana	Africa	1.5	3	0.01	1153	1302
Gabon	Africa	1.2	5	0.87	667	2055
Gambia	Africa	1.2	120	0.1	192	32
Guinea-Bissau	Africa	1.2	41	0.1	66	22
Namibia	Africa	1.7	2	0.01	916	881
Swaziland	Africa	1	55	0.01	1090	855

Sorted in ascending order on 'Country'

Search Population < 2

Check data entry of Botswana
Gabon & Swaziland
Must be 100% accurate

Name bottom right of report

Does not have to be at bottom of the page

<Candidate's name>

Heading 'Low density and high energy' at the top

Does not have to be in the header, any alignment is acceptable

Low density and high energy

Only these 4 fields selected
Can be any order or layout

Density Country

12 Algeria

5 Gabon

3 Libya

Region

Africa

Africa

Africa

Energy

1.58

0.87

3.34

3.34

Search
Density <20 AND Energy > 0.5

Calculated Field
Maximum Energy calculated

<Candidate's name>

Name bottom left of report

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Sorted in descending order on 'Density'

A4 page size - Portrait
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Quattichem – Phase 2

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Image of any building inserted
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- economic factors
- political stability
- availability of water
- good transport links

Body text fully justified
10 point
1.5 times line spacing

Page numbering moved to bottom right
Must be in the footer

Page N

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The team working on this project will be split into two. David will lead the overall development and with his colleagues, will collect and collate all the relevant information about all countries on the given list (which must include those mentioned above). Sofia's team will focus on those countries where annual Imports are greater than 100 AND less than 500 and with the Exports less than 50. The starting point for this team will be

Country	Density	Imports	Exports
Benin	52	125	34
Gambia	120	192	32

Database extract placed here
Format of the extract is not important

Searching for
100 < Imports < 500
AND Exports < 50

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

One factor which is of prime importance is that is free from earth movements, earthquakes and ... means that Sofia's team must investigate which of the countries noted has no record of earthquakes or volcanic activity, as well as checking where tectonic plate boundaries lie within the continent. As climate will not be a factor affecting the running of the plant, the only consideration of this should be during the construction phase. These geographical factors were an area of focus for the Quattichem board when they commented upon the initial feasibility studies. Please ensure that these are highlighted at an early stage of the report.

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Activity	Region	Percentage
Industry	Cottage Industry	7%
Agriculture	Coffee, Maize	56%
Unemployed		34%
Education or Other		3%

The initial grids and first draft of the report must be completed by next Friday. All team members will meet for a briefing at 10 o'clock on the following Monday in the conference room to discuss the next steps of the development of this report.

Table inserted here

100% accuracy in numeric data entry needed
Any alignment acceptable

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