



# **MARKSCHEME**

**November 2013**

## **INFORMATION TECHNOLOGY IN A GLOBAL SOCIETY**

**Higher Level and Standard Level**

**Paper 2**

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## Using assessment criteria for external assessment

For external assessment, a number of assessment criteria have been identified. Each assessment criterion has level descriptors describing specific levels of achievement, together with an appropriate range of marks. The level descriptors concentrate on positive achievement, although for the lower levels failure to achieve may be included in the description.

Examiners must judge the externally assessed work at SL and at HL against the four criteria (A–D) using the level descriptors.

- The same assessment criteria are provided for SL and HL.
- The aim is to find, for each criterion, the descriptor that conveys most accurately the level attained by the candidate, using the best-fit model. A best-fit approach means that compensation should be made when a piece of work matches different aspects of a criterion at different levels. The mark awarded should be one that most fairly reflects the balance of achievement against the criterion. It is not necessary for every single aspect of a level descriptor to be met for that mark to be awarded.
- When assessing a candidate's work, examiners should read the level descriptors for each criterion until they reach a descriptor that most appropriately describes the level of the work being assessed. If a piece of work seems to fall between two descriptors, both descriptors should be read again and the one that more appropriately describes the candidate's work should be chosen.
- Where there are two or more marks available within a level, examiners should award the upper marks if the candidate's work demonstrates the qualities described to a great extent. Examiners should award the lower marks if the candidate's work demonstrates the qualities described to a lesser extent.
- Only whole numbers should be recorded; partial marks, that is fractions and decimals, are not acceptable.
- Examiners should not think in terms of a pass or fail boundary, but should concentrate on identifying the appropriate descriptor for each assessment criterion.
- The highest level descriptors do not imply faultless performance but should be achievable by a candidate. Examiners should not hesitate to use the extremes if they are appropriate descriptions of the work being assessed.
- A candidate who attains a high level of achievement in relation to one criterion will not necessarily attain high levels of achievement in relation to the other criteria. Similarly, a candidate who attains a low level of achievement for one criterion will not necessarily attain low achievement levels for the other criteria. Examiners should not assume that the overall assessment of the candidates will produce any particular distribution of marks.
- The assessment criteria must be made available to candidates prior to sitting the examination.

**Theme: Education and training**

**Criterion A — The issue and stakeholder(s)**

**[4 marks]**

**1. (a) Describe *one* social/ethical concern related to the IT system.**

*Social/ethical concerns may include the following:*

- **privacy/security:** access by university admissions officers to personal information on the applicant’s social networking websites, especially information that is not meant to be linked or used for university applications. Information on *Facebook* does not have the purpose for use in academic applications but sharing with friends and family, hence inappropriate use by university
- **security:** applicants may not have used appropriate settings or unknowingly revealed information by allowing access to their social networking website account
- **digital citizenship:** detrimental information about the applicant may be posted by “friends” on social networking websites
- **misuse of information:** applicants are unaware that university admissions officers use the information from the applicant’s social networking websites to determine if they will be accepted in university
- **policies and standards:** lack of university policies regarding the access/use of applicants’ social networking websites in the application process.

**(b) Describe the relationship of *one* primary stakeholder to the IT system.**

*Primary stakeholders may include the following:*

- student who is applying to university and has posted information on social networking websites and/or whose acquaintances may have posted information about them
- university admissions officers who access information posted by the student on social networking websites
- university admissions officers who use questionable practices to obtain information from a student’s personal social networking websites.

Marks	Level descriptor
0	The response does not reach a standard described by the descriptors below.
1	Either an appropriate social/ethical concern <b>or</b> the relationship of <b>one</b> primary stakeholder to the IT system in the article is identified.
2	Either an appropriate social/ethical concern <b>or</b> the relationship of <b>one</b> primary stakeholder to the IT system in the article is described <b>or</b> both are identified.
3	Either an appropriate social/ethical concern <b>or</b> the relationship of <b>one</b> primary stakeholder to the IT system in the article is described; the other is identified.
4	Both an appropriate social/ethical concern <b>and</b> the relationship of <b>one</b> primary stakeholder to the IT system in the article are described.

**Criterion B — The IT concepts and processes****[6 marks]****2. (a) Describe, step-by-step, how the IT system works.****IT system: social networking websites are used by university admissions officers to access student information.***Answers provided in the article include the following:*

- student has posted information (text, photos, videos or other media) on social networking websites such as *Facebook*
- university admissions officers have access to the student’s public information on *Facebook*
- university admissions officers may use methods to gain access to student’s personal social networking websites.

*Answers with additional information to that in the article may include the following:***Admissions Officer**

- admissions officer creates an account on a social networking website, for example *Facebook*, and enters personal information
- uses web-browser to do so
- logon to gain access to pages on social website using username and password
- search for candidate name on social website
- uses link from search engine
- uses posts from “friends” who tag a candidate
- downloads material from website – images, comments, *etc*
- access data if allowed too by the security settings set up by the student
- the university admissions officer requests to be a “friend” of the applicant or use some other means for gaining access
- the applicant accepts the invitation
- the university admissions officer can also access the information posted by “friends”.

*Technical references may include the following: servers, databases, passwords, encryption, https, URL, HTTPS, database query, privacy settings, search engine/bar in Facebook, search engine.**continued ...*

*Question 2(a) continued*

**Student – similar to admissions officer steps but can include the following:**

- student creates an account on a social networking website, for example *Facebook*, and enters personal information
- the applicant may not have set the security settings on the *Facebook* account, allowing anyone access to personal information such as postings, photos, memberships in groups
- the applicant may have linked to “friends” pages where there are undesirable messages or photos
- “friends” of the applicant may have posted negative messages or photos about the applicant on their homepages
- websites such as *Facebook* provide face recognition features to identify additional photos of the applicant.

**N.B.** “Friends” are persons that the student approves to access their personal pages on a social networking site such as *Facebook*.

Accept if the student talks about one social networking website (for example *Facebook*, *Twitter*, or other).

Steps do not have to be in this order.

**(b) Explain the relationship between the IT system and the social/ethical concern described in *Criterion A*.**

*Answers may include the following:*

*Privacy/Security would be a concern if:*

- the privacy settings have not been set and so allow access to the personal information on the social networking website
- the university admissions officer takes advantage of the lack of security of the student’s information on social networking website(s) to gain access to it
- the university stores information about the student from the student’s social networking website(s). Possibly that information can be accessed by other persons at the university.

*Digital citizenship would be a concern if:*

- detrimental content is posted by “friends” either in text or photos
- the university considers information about the applicant that was posted by “friends” without attempting to verify the content.

*Misuse of information would be a concern if:*

- information from social networking website(s) becomes a part of the applicant’s record at the university.

*Policies and standards would be a concern if:*

- lack of university policies regarding the access to and use of an applicant’s social networking website(s) in the application process leads to unethical or fraudulent practices. (**how** – link between *Facebook* and policy needed to use/manage the data on *Facebook*, **why** – weakness – not present or inadequate).

*Candidates are expected to make reference to relevant stakeholders, information technologies, data and processes. Candidates will be expected to refer to “how the IT system works” using appropriate IT terminology.*

*continued ...*



*Question 2(b) continued*

<b>Marks</b>	<b>Level descriptor</b>
0	The response does not reach a standard described by the descriptors below.
1–2	<p>There is little or no understanding of the step-by-step process of how the IT system works and does not go beyond the information in the article.</p> <p>The major components of the IT system are identified using minimal technical IT terminology.</p>
3–4	<p>There is a description of the step-by-step process of how the IT system works that goes beyond the information in the article.</p> <p>Most of the major components of the IT system are identified using some technical IT terminology.</p> <p>The relationship between the IT system referred to in the article and the concern presented in Criterion A is identified, with some use of ITGS terminology.</p>
5–6	<p>There is a detailed description of the step-by-step process that shows a clear understanding of how the IT system works that goes beyond the information in the article.</p> <p>The major components of the IT system are identified using appropriate technical IT terminology.</p> <p>The relationship between the IT system referred to in the article and the concern presented in Criterion A is explained using appropriate ITGS terminology.</p>

**Criterion C — The impact of the social/ethical issue(s) on stakeholders**

**[8 marks]**

**3. Evaluate the impact of the social/ethical issues on the relevant stakeholders.**

*Positive impact for the applicant may include the following:*

- the university admissions officer may be impressed with the work the applicant has posted online
- the applicant can present work that may give him an advantage over other applicants
- applicants can continuously update their achievements online
- applicants can control what information they post about themselves online.

*Negative impact for the applicant may include the following:*

- applicants do not realize that information that they posted when they were younger can have long range consequences
- information that has been erased from a social networking website may still exist in other places
- some information posted about the applicant may not be valid
- personal photos may be tagged and viewed by others
- the applicant has no control over the information posted about him by “friends”
- the applicant may not have any knowledge of the detrimental information that caused his rejection by the university.

*Positive impact for the university admissions officer may include the following:*

- they gain an insight from the information in *Facebook* and other social networking websites about the applicant that that they would not have gained otherwise
- the postings may lead to excellent questions to ask in the interview with the applicant
- the admissions officer can follow up on the information that they found on the social networking website.

*Negative impact for the university admissions officer may include the following:*

- the information may be misleading and not present a true picture of the applicant
- the university may not support some practices used by the admissions officer to collect additional information about applicants
- rejection on the basis of postings on social networking websites could lead to legal action against the university/university admissions officer from the applicant.

*Positive impact for Facebook/social networking site may include the following:*

- increased use of *Facebook* by Universities – more targeted advertising on SNS sites.

*Negative impact for Facebook/social networking site may include the following:*

- less activity by students who may switch to a different social media not popular with universities
- loss of reputation if linked with privacy issues related to the universities use of personal data.

*continued ...*

*Question 3 continued*

Marks	Level descriptor
0	The response does not reach a standard described by the descriptors below.
1–2	The impact of the social/ethical issues on stakeholders is described but not evaluated. Material is either copied directly from the article or implicit references are made to it.
3–5	The impact of the social/ethical issues on stakeholders is partially analysed, with some evaluative comment. Explicit references to the information in the article are partially developed in the response. There is some use of appropriate ITGS terminology.
6–8	The impact of the social/ethical issues on stakeholders is fully analysed and evaluated. Explicit, well-developed references to information in the article are made appropriately throughout the response. There is use of appropriate ITGS terminology.

**Criterion D — A solution to a problem arising from the article****[8 marks]****4. Evaluate *one* solution that addresses at least *one* problem identified in *Criterion C*.**

*Answers may include the following:*

*Solutions to the privacy/security problem of how to prevent access to applicant's information on social networking website(s):*

- keep social networking website(s) protected (*ie* update privacy settings, untag from friends' photo albums); evaluation: only partially effective due to "friends" postings and they may accept unknown friend requests
- keep user names and other identifying information private in any correspondence with the university; effectiveness: limited because the university can find out these details by other means
- setup a special account for application purposes, but first must hide the other account which may be difficult to do, and it could still be searched for and found – many people do this with email and social media accounts
- do not accept invitations on social networking websites from unknown persons; effectiveness: stops access to private information
- universities develop clear and transparent policies about the use of information on social networking websites relating to prospective students. Effectiveness: prevents applicant information becoming a part of official records, but does not stop informal browsing by university admissions officers. Policies may include statements about:
  - digital citizenship
  - authentication and verification
  - data storage
  - data protection and security
  - data integrity.

*Solutions to the problem of how to identify/remove undesirable information from an applicant's social networking website(s):*

- the applicant "scrubs" their own digital footprint of any detrimental information (*ie* text, images, videos and files; evaluation: partially effective, total elimination is not possible
- students are advised on how to create a positive digital footprint (*ie* update profile, post new information that creates a positive impression. Effectiveness: the more recent positive online activities will cause those to rise to the top of online searches and make earlier postings appear further down in the results.

[Source: <http://www.pcmag.com/article/print/261151>, 20 October 2011;  
<http://www.dailynorthwestern.com/campus/law-school-admissions-use-facebook-google-to-screen-applicants-study-finds-1.2661900>, 20 October 2011]

*continued ...*

*Question 4 continued*

Marks	Level descriptor
0	The response does not reach a standard described by the descriptors below.
1–2	<b>One</b> feasible solution to at least <b>one</b> problem is proposed and described. No evaluative comment is offered. Material is either copied directly from the article or implicit references are made to it.
3–5	<b>One</b> appropriate solution to at least <b>one</b> problem is proposed and partially evaluated. The response contains explicit references to information in the article that are partially developed. There is some use of appropriate ITGS terminology.
6–8	<b>One</b> appropriate solution to at least <b>one</b> problem is proposed and fully evaluated, addressing both its strengths and potential weaknesses. Areas for future development may also be identified. Explicit, fully developed references to the information in the article are made appropriately throughout the response. There is use of appropriate ITGS terminology.

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