Diploma Programme
Programme du diplôme
Programa del Diploma

Markscheme

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Information technology in a global society

Higher level

Paper 3

10 pages

International Baccalaureate
Baccalauréat International
Bachillerato Internacional

Critical Thinking – explanation, analysis and evaluation

These trigger words often signal critical thinking. The bold words are the key terms in the various criteria.
Explanation – *Because, as a result of, due to, therefore, consequently, for example*
Analysis – *Furthermore, additionally, however, but, conversely, likewise, in addition, on the other hand, whereas*
Evaluation – *My opinion, overall, although, despite, on balance, weighing up*

Examiners should be aware that in some cases, candidates may take a different approach, which if appropriate should be rewarded. If in doubt, check with your Team Leader.

If candidates answer more than the prescribed number of questions:

- In the case of an "identify" question read all answers and mark positively up to the maximum marks. Disregard incorrect answers.

- In the case of a "describe" question, which asks for a certain number of facts *eg* "describe two kinds", mark the **first two** correct answers. This could include two descriptions, one description and one identification, or two identifications.

- In the case of an "explain" question, which asks for a specified number of explanations *eg* "explain two reasons", mark the **first two** correct answers. This could include two full explanations, one explanation, one partial explanation *etc*.

1. (a) Identify **two** reasons why parents may choose to restrict their children's access to social media. **[2]**

Answers may include:
- cyber bullying
- time management (interference with studies/time with family)
- privacy
- digital footprint (reputation)
- fake news
- unsuitable/inappropriate content/stories
- unsuitable contact
- can lead to mental health issues
- addiction
- contact with potentially dangerous strangers.
- access to content unsuitable for children.
- children's safety could be threatened by hackers as well as possible kidnapping.

Note: Do not accept FOMO

Award [1] for identifying each reason why parents may choose to restrict their children's access to social media, up to a maximum of [2].

(b) Identify **two** reasons why Laura may have chosen to detox from using social media in her personal life. **[2]**

Answers may include:
- to save money by avoiding impulse shopping from social media advertisements
- to reclaim time that used to be spent online and use it in the real world
- psychological – to remove the pressure to be perfect online
- psychological – to withdraw from addiction of social media
- psychological – depression/suicide
- psychological - FOMO
- reduce digital footprint
- to take back control of her digital footprint
- maintain a professional reputation.

Note: *Accept other reasons that are age-appropriate for Laura.*

Award [1] for identifying each reason why Laura may have chosen to detox, up to a maximum of [2].

2. (a) While Laura is working in Asia, she is trying to view the same online content as her brother Hugo.

Explain **one** reason why Laura and Hugo may not have access to the same online content on the same social media platform. **[3]**

Answers may include:
- Technological control:
  - o The use of content filters on internet gateways…
  - o …such as content filtering on a home/school/country level.
  - o ...VPNs can help mitigate the problem
  - o Permissions may be set differently for Laura and Hugo…
  - o …which may lead to sites being available on one device and not on others.
- Government and country controls:
  - o Government policy to ban or limit access to certain social media…
  - o …meaning that certain sites are not available
  - o …reason is cultural/beliefs.
- Security:
  - o Permissions may be set differently for Laura and Hugo…
  - o …which may lead to sites being available on one device and not on others.
- Bandwidth:
  - o Laura may not have access to sufficient bandwidth to access a video that Hugo is watching…
  - o …meaning certain videos would not be streamed effectively.
- Algorithms:
  - o Algorithms will create Filter bubble" based on Hugo or Laura previous   online behaviour (search history, likes, shares and shopping habits)
  - o ...meaning that different content will be seen on their social media feeds.

*Award **[1]** for identifying why Laura and Hugo have a different level of access to a social media platform and **[1]** for each development of that reason and **[1]** for linking back to the different levels of access, up to a maximum of **[3]**.*

(b) Explain the relationship between bandwidth and net neutrality. **[3]**

Answers may include:
- Net neutrality is dependent on an internet service provider's ability to provide the infrastructure to allow the same internet coverage to all of its paying customers.
- Net neutrality is dependent on an internet service provider's pricing and data plans to allow the same bandwidth to all of its paying customers.
- Net neutrality is dependent on the internet service provider's policy to provide equal access (bandwidth) to all web servers.
- Net neutrality is dependent on the country legislation that the internet service provider is operating on and how this impacts their ability to provide equal access (bandwidth) to all websites.

Bandwidth describes the maximum data transfer rate of an internet connection. It measures how much data can be sent over a specific connection at one time, eg 25 mbps.
Note to examiners: Bandwidth is not the same as Internet speed (do not accept).

Net neutrality is the principle that internet service providers should enable access to all content and applications regardless of the source, and without favouring or blocking particular websites.
Both net neutrality and bandwidth are controlled by the ISP.

*Award **[1]** for correct definition of bandwidth.*
*Award **[1]** for correct definition of net neutrality.*
*Award **[1]** for explaining the relationship between bandwidth and net neutrality.*

3. Universities are requesting access to Hugo's social media accounts. Discuss whether
this is acceptable. **[8]**

Answers may include:

Reasons why it is acceptable:
- Allows a university admissions officer to match the suitability of students with the
  university, giving them access to information to help filter a large number of
  applicants to the limited places.
- The university can verify parts of the student's application with social media posts,
  eg hobbies and interests.
- Allows a student to showcase their characteristics and skills beyond their
  application.
- Ensures that future students are not associated with undesirable groups/friends that
  could damage the reputation of the university.
- The university has asked permission from Hugo and the person accessing the
  accounts is the admissions officer. There would need to be a policy in place
  regarding the privacy of Hugo's data.
- Hugo was aware that this permission would be requested. He has realized the
  importance of managing his digital footprint/wants to showcase his stories for the
  school magazine.

Reasons why it is not acceptable:
- Students may not have control over what others post on their social media accounts.
- Historical posts on social media may not truly represent the student as they are now.
- Posts are of a social nature and were not intended for the university.
- The university is not a friend.
- Allowing universities to have access may make accounts less private than the
  student wishes.
- Access to social media may give access to more information than required for a
  student's application.

Note for examiners: For a 'Proficient' response it must explicitly relate to Hugo.

SL and HL paper 1 part (c) and HL paper 3 question 3 markband

Marks	Level descriptor
No marks	• A response with no knowledge or understanding of the relevant ITGS issues and concepts. • A response that includes no appropriate ITGS terminology.
Basic **1–2 marks**	• A response with minimal knowledge and understanding of the relevant ITGS issues and concepts. • A response that includes minimal use of appropriate ITGS terminology. • A response that has no evidence of judgments and/or conclusions. • No reference is made to the scenario in the stimulus material in the response. • The response may be no more than a list.
Adequate **3–4 marks**	• A descriptive response with limited knowledge and/or understanding of the relevant ITGS issues and/or concepts. • A response that includes limited use of appropriate ITGS terminology. • A response that has evidence of conclusions and/or judgments that are no more than unsubstantiated statements. The analysis underpinning them may also be partial or unbalanced. • Implicit references are made to the scenario in the stimulus material in the response.
Competent **5–6 marks**	• A response with knowledge and understanding of the relevant ITGS issues and/or concepts. • A response that uses ITGS terminology appropriately in places. • A response that includes conclusions and/or judgments that have limited support and are underpinned by a balanced analysis. • Explicit references to the scenario in the stimulus material are made at places in the response.
Proficient **7–8 marks**	• A response with a detailed knowledge and understanding of the relevant ITGS issues and/or concepts. • A response that uses ITGS terminology appropriately throughout. • A response that includes conclusions and/or judgments that are well supported and underpinned by a balanced analysis. • Explicit references are made appropriately to the scenario in the stimulus material throughout the response.

4.   To what extent are social media companies responsible for ensuring the ethical use of their platforms?   **[12]**

The response to question 4 **must** include evidence of independent research linked to the *Our social media lives* case study.

Answers may include:

Social media companies are responsible for ensuring the ethical use of their platforms:
- They have control over the technical developments of the platform, which include:
  - algorithms that impact the adverts users see and the news that is read
  - they can develop with ethical design to promote ethical online behaviour, *eg* pop-ups to prompt users to take a break
  - they can develop the platform, allowing users to customize how they want to interact with the platform.
- They have tools to monitor the use of the platform by the users, such as:
  - tools to authenticate users, so there are fewer under-age users and users misrepresenting themselves
  - tools to monitor inappropriate content.
  - tools for monitoring time spent on social networks. For example, on IG
- They can develop reporting tools to facilitate users reporting unethical uses of the platform, *e.g.* trolling.
- They can write acceptable use policies for users to agree to.
- They are responsible for the security of the data stored on the platform.
- They are responsible for the third-party access to the platform.
- Alert/disable explicit content, e.g., sexual exploitation, pederasty, recruitment of youth and adults for terrorist groups, among others.

Social media companies are not responsible for ensuring the ethical use of their platforms:
- Even with ethical design, users can still misuse the platform.
- Users intent on unethical use will develop ways to bypass measures put in place by the social media companies.
- More emphasis on monitoring may mean social media companies will be required to develop more IA or employ more staff to monitor, which may not be effective.
- Social media may need to block more content, which reduces freedom of speech.
- Ultimately, users must be responsible for their own behaviour.
- Users may not read and follow policies put in place.

Notes for examiners:
Use of Independent research and how it is applied to the mark bands
Adequate: Implicit research for example referring to a named social media platform
e.g., on Facebook...this may be common knowledge
Competent: Explicit research could include more detail of the workings of the platform
or details of a specific scenario in the news, beyond common knowledge
Proficient: Explicit research with details of the scenario including the source e.g. The BBC News reported in 2020....

HL paper 3 question 4 markband

Marks	Level descriptor
No marks	• A response with no knowledge or understanding of the relevant ITGS issues and concepts. • A response that includes no appropriate ITGS terminology.
Basic **1–3 marks**	• A response with minimal knowledge and understanding of the relevant ITGS issues and concepts. • A response that includes minimal use of appropriate ITGS terminology. • A response that has no evidence of judgments, conclusions or future strategies. • No reference is made to the information in the case study or independent research in the response. • The response may be no more than a list.
Adequate **4–6 marks**	• A descriptive response with limited knowledge and/or understanding of the relevant ITGS issues and/or concepts. • A response that includes limited use of appropriate ITGS terminology. • A response that has evidence of conclusions, judgments or future strategies that are no more than unsubstantiated statements. The analysis underpinning them may also be partial or unbalanced. • Implicit references are made to the information in the case study or independent research in the response.
Competent **7–9 marks**	• A response with knowledge and understanding of the relevant ITGS issues and/or concepts. • A response that uses ITGS terminology appropriately in places. • A response that includes conclusions and/or judgments that have limited support and are underpinned by a balanced analysis. • Explicit references to the information in the case study or independent research are made at places in the response.
Proficient **10–12 marks**	• A response with a detailed knowledge and understanding of the relevant ITGS issues and/or concepts. • A response that uses ITGS terminology appropriately throughout. • A response that includes conclusions, judgments or future strategies that are well supported and underpinned by a balanced analysis. • Explicit references are made appropriately to the information in the case study and independent research throughout the response.