

# Markscheme

**November 2025**

**Digital society**

**Higher level**

**Paper 3**

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1. (a) With reference to Source C, identify **two** requirements of a voting app. [2]

*Answers may include:*

- User-friendly interface
- Security measures to keep voters' data safe
- Ability to register to vote
- Ability to verify user
- Ability to vote
- Provide information about the candidates
- Provide information about the voting process
- Accessible to all Available on all platforms

*Note to examiners – Some students may interpret the question as requirements for an app, accept responses such as:*

- Use of firewall
- Internet access
- Mobile device

*Award [1] for each requirement of the Voting App up to [2].*

- (b) Outline **one** characteristic of a social media voting awareness campaign. [2]

*Answers may include:*

- Engagement.  
• These campaigns aim to engage a broad and diverse audience through various social media platforms, such as Facebook, X, Instagram, and TikTok
- Information sharing.  
• They provide accurate and up-to-date information about voter registration, polling locations, deadlines, and other important voting-related details.
- Promotes participation.  
• Voting awareness campaigns focus on encouraging civic participation rather than promoting any specific political party or candidate.
- Education.  
• They educate people about the electoral process, including how to register, the importance of voting, and the impact of their vote on local and national issues.
- Visual Content.  
• Effective campaigns use visual content, including infographics, videos, and images, to convey their message in an easily shareable format.
- Hashtags.  
• They often create and promote campaign-specific hashtags to facilitate conversations and track engagement on social media platforms.
- Calls to Action.  
• Campaigns encourage users to take specific actions, such as registering to vote, checking their voter registration status, or sharing campaign materials.
- Partnerships.  
• They may collaborate with influencers, celebrities, or other organizations to extend their reach and credibility.

- User-Generated Content.
- Some campaigns encourage supporters to create and share their content, stories, and personal experiences related to voting to create a sense of community and authenticity.
- Targeted Messaging.
- Campaigns may tailor their messages to different demographics to ensure that the content is relevant and relatable to a wide range of potential voters.
- Mobilization.
- The campaigns often focus on getting people to the polls on election day, providing information about early voting, mail-in voting, and transportation options if necessary.
- Measurement and Evaluation.
- Social media voting awareness campaigns typically monitor and evaluate their impact using metrics like reach, engagement, shares, and the number of people who take specific actions in response to their content.
- Accessibility.
- They ensure that their content is accessible to individuals with disabilities, such as providing alt text for images and closed captioning for videos.
- Response to Misinformation.
- Some campaigns actively combat voting-related misinformation and disinformation by providing accurate information and resources to counter false claims.
- Campaign needs to be neutral
- The purpose of the campaign is to promote voting participation and cannot be bias towards one political party

*Award [1] for identifying a characteristic of a social media voting awareness campaign and [1] for a development of that characteristic up to [2].*

2. (a) Explain **one** reason why social media voting awareness campaigns may not increase the number of citizens voting.

[3]

*Answers may include:*

- Information overload.
- In today's digital age, people are constantly bombarded with a vast amount of information, including ads, news, and various campaigns on their social media feeds.
- When there is an excess of content, it can be challenging for a particular campaign to stand out and capture the audience's attention.
  
- Desensitized.
- If individuals see too many similar campaigns or messages, they may become desensitized or develop banner blindness
- Causing them to scroll past without engaging with the content.
  
- Not knowing the audience
- Citizens use a range of social media apps which will vary according to the demographic.
- The elderly may not be engaging at all with social media and students' use of social media can change quickly depending on the trend.
  
- Digital Divide
- Not all citizens use social media or may not have access to the internet
- This group of citizens would not be able to view the campaign and therefore the campaign would not result in an increase in votes
  
- Fake News
- If the social media awareness campaign consists of false claims, users might not trust the promotion campaign.
- If users have not trust, then they will ignore the campaign and not vote.
  
- Ineffective message
- The information in the social media campaign still might not convince voters that their vote counts, e.g. Eduardo in source D does not care and therefore might not be open to having his mind changed

*Award [1] for identifying a reason why social media voting awareness campaigns may not increase the number of citizens voting and [1] for each subsequent development of that reason up to [3].*

- (b) Explain **one** way in which the use of blockchain technology will make voting with the app secure.

[3]

*Answers may include:*

- Immutable Ledger ensures the integrity of the voting record.
- Blockchain creates a tamper-proof ledger of all transactions.
- Each vote is recorded as a transaction in a block, and once added to the chain, it cannot be altered or deleted.
  
- A blockchain network is typically decentralized, with copies of the ledger distributed across multiple nodes or computers.
- This prevents a single point of failure
- Making it extremely difficult for malicious actors to manipulate the voting data or disrupt the system.
  
- Votes are securely encrypted on the blockchain.
- Only authorized users with the necessary cryptographic keys can access and verify the authenticity of the votes
- Ensuring data privacy and security.
  
- All blockchain transactions are transparent and can be viewed by anyone.
- This transparency allows for independent verification of the voting process, reducing the potential for fraud or manipulation.
- Voters can verify that their votes were counted accurately.
  
- Smart contracts can be used to automate the voting process.
- These self-executing contracts ensure that votes are counted accurately and according to predefined rules
- Reducing the potential for human error or bias.
  
- Each vote on a blockchain is timestamped
- Creating a chronological record of when votes were cast.
- This can help in auditing the process and ensuring that votes were not altered after submission.
  
- Blockchain can be used to securely authenticate voters.
- Once a voter's identity is verified, their vote is associated with their digital identity on the blockchain
- Reducing the risk of fraudulent voting.
  
- Blockchain's decentralized nature makes it resilient to Distributed Denial of Service (DDoS) attacks.
- Even if some nodes are targeted
- The network can continue to operate.
  
- Once the voting process is complete and the results are recorded on the blockchain, they cannot be altered.
- This ensures the finality and integrity of the election outcome.
- Leading to immutability.

- Blockchain can be used to securely transmit votes over the internet
- Reducing the risk of interception or manipulation during the transmission process.
- Ensuring the security of the voting process.

*Award [1] for identifying a way how the use of blockchain technology will make the remote voting process secure and [1] for each subsequent development of that reason up to [3].*

3. To what extent will the use of voting apps and social media awareness campaigns lead to a greater empowerment of voters?

[8]

*Answers may include:*

These technologies can empower citizens:

Voting apps and social media campaigns have the potential to empower citizens in several ways:

**Reasons why voting apps & social media lead to empowerment of voters**

**Accessibility**

- Voting apps make it easier for citizens to participate in the democratic process (change, power, systems).
- They can register to vote, find polling locations, and even vote from the convenience of their smartphones (change, systems).
- This increased accessibility can encourage more people to engage in the political process (spaces, systems).

**HL criteria – equity, acceptability, feasibility, innovation, ethics**

**Information Sharing:**

- Social media platforms provide a free space for sharing information about candidates, issues, and election details (spaces, systems).
- Campaigns and grassroots movements can use social media to inform citizens about their rights, the voting process, and the candidates' positions, increasing overall political awareness (power, systems, ethics, values, transparency).

**HL criteria – equity, acceptability, cost, feasibility, innovation, ethics**

**Engagement:**

- Social media campaigns can spark discussions and debates about political issues. They give citizens a platform to express their opinions, connect with like-minded individuals, and engage with opposing viewpoints (expression)
- This engagement can lead to a more informed and active electorate (power, values, transparency).

**HL criteria – equity, acceptability, feasibility, innovation, ethics**

**Mobilization:**

- Voting apps and social media campaigns can mobilize citizens to take action. (spaces, values)
- Campaigns can encourage people to register to vote, volunteer for campaigns, and participate in get-out-the-vote efforts (change, values).
- The ease of sharing information and updates on social media can be a powerful tool for rallying support (expression, power, systems, equity).

**HL criteria – feasibility, innovation, ethics**

**Transparency:**

- Voting apps can enhance transparency in the electoral process (power, systems, ethics, transparency).
- They can provide real-time updates on election results, ensuring citizens can trust the integrity of the process and the accuracy of the outcomes (systems, values, ethics, transparency)

**HL Criteria – Acceptability, innovation, ethics**

**Youth Engagement:**

- Younger generations are often more active on social media, making it an effective platform for reaching and engaging with younger voters (power, systems).
- Voting apps and social media campaigns can encourage young people to become more politically active (expression, power, systems).

**HL criteria - equity, acceptability, feasibility, innovation, ethics**

**Community Building:**

- Social media can help build communities around specific issues or candidates (expression, values).
- These communities can provide a sense of belonging and support for citizens who are passionate about a particular cause, helping them stay engaged over the long term (identity).

**HL criteria – acceptability, innovation, ethics**

**Feedback Mechanism:**

- Voting apps can provide feedback mechanisms for citizens to report issues, irregularities, or concerns related to the voting process, which can lead to improvements and increased confidence in the system (systems, power, transparency).

**HL criteria – acceptability, innovation, ethics**

**Data Analysis:**

- Both voting apps and social media campaigns generate a wealth of data that can be analyzed to understand voter behavior and preferences better (power, systems, values, ethics, data).
- This data can inform campaign strategies and policy decisions (change, systems, ethics, values).

**HL criteria – innovation ethics**

It's important to note that while these tools can empower citizens, they also come with challenges, such as the spread of misinformation on social media and concerns about the security and privacy of voting apps. Nevertheless, when used responsibly and ethically, voting apps and social media campaigns can be valuable tools for empowering citizens and enhancing their participation in the democratic process.

Reasons why these technologies do not empower

Voting apps and social media campaigns can have both positive and negative effects on citizen empowerment. Here are some reasons why they may not always empower citizens:

## **Reasons why voting apps and social media do not lead to empowerment of voters**

### **Digital Divide:**

- Not all citizens have equal access to technology and the internet. Voting apps and social media campaigns may exclude those who lack the necessary resources or digital literacy, potentially disenfranchising them eg the elderly, socially or economically disadvantaged, disabled, people from other cultures (power, systems, ethics, equity).

**HL criteria – equity, acceptability, ethics**

### **Manipulation and Misinformation:**

- Social media campaigns can be manipulated by individuals or groups with vested interests, spreading misinformation or disinformation. This can mislead citizens and hinder their ability to make informed decisions (power, systems, ethics, values, transparency).

**HL criterion - ethics**

### **Echo Chambers:**

- Social media often reinforces users' preexisting beliefs, creating echo chambers where citizens are exposed to a limited range of viewpoints. This can discourage open dialogue and critical thinking (values).

**HL criterion - ethics**

### **Privacy Concerns:**

- Voting apps and social media platforms may raise concerns about user privacy and data security. Citizens may be hesitant to engage fully if they fear their personal information is at risk (privacy, anonymity, ethics).

**HL criteria – acceptability, ethics**

### **Shallow Engagement:**

- Social media campaigns may encourage passive participation, such as liking or sharing a post, rather than more active and meaningful engagement in the political process. Voting apps can also simplify the voting process to the point where citizens may not fully comprehend the issues or candidates. (values, ethics)

**HL criterion – ethics**

### **Short Attention Span:**

- Social media can contribute to short attention spans and superficial understanding of complex political issues, making it challenging for citizens to delve deeply into the topics at hand (values, ethics).

**HL criterion – ethics**

### **Digital Manipulation:**

- Voting apps and online campaigns are susceptible to hacking and digital manipulation, potentially undermining the integrity of elections and political processes (systems, ethics, security, trust, transparency).

**HL criterion – ethics**

### **Disenfranchisement:**

- In some cases, reliance on digital tools can disenfranchise those who are unable to use them due to disabilities, age, or other barriers (power, systems, ethics, values).

**HL criteria – equity, ethics**

### **Depersonalization:**

- The use of digital technology can depersonalize the political process, making it feel less connected and meaningful to citizens. This can result in apathy and reduced civic engagement (power, systems, ethics, values).

**HL criterion - ethics**

**Lack of Accountability:**

- When things go wrong with voting apps or social media campaigns, there may be a lack of accountability or transparency in addressing issues and ensuring fairness (values, ethics, accountability, transparency).

**HL criterion - ethics**

In summary, while voting apps and social media campaigns have the potential to empower citizens, they also come with a range of challenges and drawbacks that need to be carefully considered to ensure they do not inadvertently disempower or disenfranchise citizens. Balancing the benefits and drawbacks is essential for a more inclusive and effective democratic process.

**Keywords:** change, expression, identity, power, spaces, systems, values, ethics, data, diversity, discrimination, political participation, social - group membership, digital media dilemmas, rapid sharing, media authenticity, social media, data analytics, data integrity, voting process, equity, transparency, accountability

Please use the markband on page 12.

The following markband should be used with responses to question 3.

HL Paper 3, question 3	
Marks	Level descriptor
0	The work does not reach a standard described by the descriptors below.
1–2	<ul style="list-style-type: none"> <li>• The response shows a limited understanding of the demands of the question.</li> <li>• The response is of limited relevance. The response is descriptive and consists mostly of unsupported generalizations.</li> <li>• The response has limited organization.</li> </ul>
3–4	<ul style="list-style-type: none"> <li>• The response shows some understanding of the demands of the question.</li> <li>• The response is primarily descriptive with some evaluation demonstrated but this is not sustained or fully supported.</li> <li>• The response is partially organized.</li> </ul>
5–6	<ul style="list-style-type: none"> <li>• The response shows adequate understanding of the demands of the question.</li> <li>• The response demonstrates adequate evaluation that is relevant and supported.</li> <li>• The response is adequately organized.</li> </ul>
7–8	<ul style="list-style-type: none"> <li>• The response is focused and shows an in-depth understanding of the demands of the question.</li> <li>• The response demonstrates sustained evaluation that is relevant and well-supported throughout.</li> <li>• The response is well-structured and effectively organized.</li> </ul>

4. Danton Council has asked Luis Cortez, the Mayor of Danton, to choose between two interventions to address the challenge of low voter participation among young and elderly citizens:
- **Intervention 1:** Fund a smart phone voting app with blockchain technology to allow citizens to vote remotely.
  - **Intervention 2:** Run a social media voting awareness campaign to encourage citizens to participate in the voting process.

Recommend which of the interventions Luis should choose.

[12]

### **Intervention 1: Fund a Smart Phone App with Block Chain Technology**

#### **Advantages**

- The youth are used to using apps so would be familiar with this approach (systems, feasibility, accessibility) HL criteria – acceptability, feasibility
- There is no need to have physical spaces that voters must attend (spaces, systems, cost, feasibility, equity) cost
- Language options and/or speech features – could improve accessibility and therefore more voting by both the elderly and the youth (accessibility, equity) equity, acceptability, feasibility, innovation
- The long-term cost savings for the local government, will be seen in subsequent years due to those not incurred by paper or physical voting (cost, change) cost, innovation
- Voters will not need to travel to vote, saving on travel costs and time (cost) cost
- Reduced paper voting will be beneficial to the environment (sustainability) innovation, ethics
- Block-chain will allow greater security, transparency and reduce vote tampering and voters will have greater trust in the system (Source B) (systems, feasibility, innovation, ethics) acceptability, innovation, ethics
- Remote voting with an app, provides a more private vote. Voters will not get bullied for their voting choices (space, ethics) ethics

#### **Disadvantages**

- Not all voters will be able to use the app if it is not available and tested on all app stores (systems, accessibility, equity). Equity, feasibility
- The digital divide may limit the elderly from voting using the smart phone app if they don't have a compatible phone, or do not have access to the app store (Source C) (equity, systems) equity, feasibility, ethics
- Phone screens may be too small for the elderly to see the voting clearly or they may not have the manual dexterity to place the 'right vote' (accessibility) (Source C) equity, feasibility, ethics
- The elderly may lack the digital literacy skills and are not able to download and use the voting app (Source C) (accessibility, equity, feasibility) equity, feasibility, ethics
- If the app is not publicized, voters may not know that it exists and therefore the council will have wasted money building the app (cost) cost
- Voting apps are relatively new and lack of trust may mean that voters are not keen to use them (Source D) (systems, acceptability, ethics, trust) acceptability, ethics
- The short-term cost of developing and testing the app will be considerable and back up solutions may also be costly (cost) cost
- The elderly may miss the social interaction of placing a vote (Source C) (values) ethics
- How can voters be sure that there is no bias in the voting algorithms – whether this is deliberate, or accidental (data breach) (systems, transparency, ethics, values, equity, feasibility) acceptability, ethics

- How can voters be sure that there has been adequate testing of the app and it will be reliable on the day of voting? (Source B) (systems, feasibility, reliability) acceptability, ethics
- Additional technologies will need to be employed to secure the data being stored from data breaches (systems, ethics, cost, feasibility) cost, ethics
- Concerns may arise as to how the data collected from the app is being used, who has access to it? How it is verified, and their anonymity may be at risk (Source D) (privacy, anonymity, ethics) acceptability, ethics

## **Intervention 2 Run a Social Media Voting Awareness Campaign**

### **Advantages**

- The campaign can be spread across multiple platforms and reach a wide audience (Source D) (equity, systems, accessibility) equity, innovation
- The campaign has the potential to promote inclusion e.g. in multiple languages and language translators can help spread the message to a wider audience (systems, equity, inclusivity) equity, innovation
- The financial cost of a social media campaign is relatively low and can be done by existing marketing staff (cost) cost
- For existing followers on social media, it can help spread the message (Source D) (accessibility, feasibility) feasibility
- Social media campaigns do not require much digital training to receive the messages (feasible, training) feasibility
- Social media is a well-established form of communication and can provide interactivity which will boost citizen participation (systems, innovation, participation) acceptability, feasibility
- Multimedia can prove to be successful in educating & changing the citizen's mindset about voting (Source D) (change, values) innovation

### **Disadvantages**

- Not all elderly citizens use social media and may prefer traditional communications e.g. newspapers, TV, and will not receive the campaign messages (expression, equity) equity
- A social media campaign will not necessarily be successful in persuading voters to participate in voting and could be considered a waste of money (cost) cost
- A social media campaign may be successful in persuading voters, but may not prompt users to act (cost) feasibility
- Social media campaigns only offer a short-term solution and will need to repeat (cost) cost, feasibility
- The youth may already be addicted to social media and political campaigns may exacerbate this, contributing to the addiction (values, ethics) ethics
- It may be difficult to break into other filter bubbles/echo chambers and therefore not have the desired positive impact of the campaign (values) feasibility
- Privacy concerns may exist if targeted marketing is being used (ethics) ethics
- The risk of the spread of misinformation is high on social media platforms (Source D) (systems, values, acceptability) ethics

In summary, while voting apps and social media campaigns have the potential to influence the voting process, both come with their advantages and disadvantages. Both interventions would appeal to the youth as they are native users of both apps and social media. Social media campaigns may inspire the youth to vote, but with the amount of misinformation and political campaigns that are not authentic, there could be a high level of mistrust. In addition, the social media campaign might not do enough to promote action. Unlike the voting app, which will be convenient to use and requires

little effort to vote. However, if the youth are not aware of the app, then they may not download and use it.

The elderly will react differently to both the social media campaign and the voting app. There will be some elderly who will access the social media awareness campaigns should the local government research their market well and target the range of platforms. This campaign may be sufficient to encourage the elderly to go and vote, while still benefiting from the social aspect of making a physical vote and maintaining trust in the existing system that the elderly are used to. The voting app may prove too problematic for the elderly, given the digital divide and technology. While some might have family support to place the vote, there are many elderly who are alone.

**Keywords:** Change, expression, power, spaces, systems, values, ethics, data, apps, feasibility, accessible, equity, cost, censorship, authentication, addiction, digital divide, discrimination, innovation, participation.

*Notes for examiners:*

*Please pay attention to responses that appear to be pre-rehearsed or generic.*

*Please refer to the markband on page 16.*

The following markband should be used with responses to question 4.

HL Paper 3, question 4	
Marks	Level descriptor
0	<ul style="list-style-type: none"> <li>The work does not reach a standard described by the descriptors below.</li> </ul>
1–3	<ul style="list-style-type: none"> <li>The response shows a limited understanding of the demands of the question.</li> <li>The response consists mostly of unsupported generalizations with limited relevant knowledge.</li> <li>No recommendations are presented or those that are presented have only limited support.</li> <li>The response has limited organization.</li> </ul>
4–6	<ul style="list-style-type: none"> <li>The response shows some understanding of the demands of the question.</li> <li>The response demonstrates some knowledge, but this is not always relevant or accurate and may not be used appropriately or effectively.</li> <li>Recommendations are presented with some support although this is not sustained and only partially effective.</li> <li>The response is partially organized.</li> </ul>
7–9	<ul style="list-style-type: none"> <li>The response shows adequate understanding of the demands of the question.</li> <li>The response is adequately supported with relevant and accurate knowledge.</li> <li>Recommendations are presented and effectively supported.</li> <li>The response is adequately organized.</li> </ul>
10–12	<ul style="list-style-type: none"> <li>The response is focused and shows an in-depth understanding of the demands of the question.</li> <li>The response is well-supported throughout with relevant and accurate knowledge.</li> <li>Recommendations are presented and well-supported with a clear consideration of possible trade-offs and implications.</li> <li>The response is well-structured and effectively organized.</li> </ul>

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