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# Digital society

## Higher level

### Paper 1

19 May 2025

Zone A afternoon | Zone B afternoon | Zone C afternoon

2 hours 15 minutes

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#### Instructions to candidates

- Do not open this examination paper until instructed to do so.
- Section A: answer two questions.
- Section B: answer one question.
- The maximum mark for this examination paper is **[52 marks]**.

### Section A

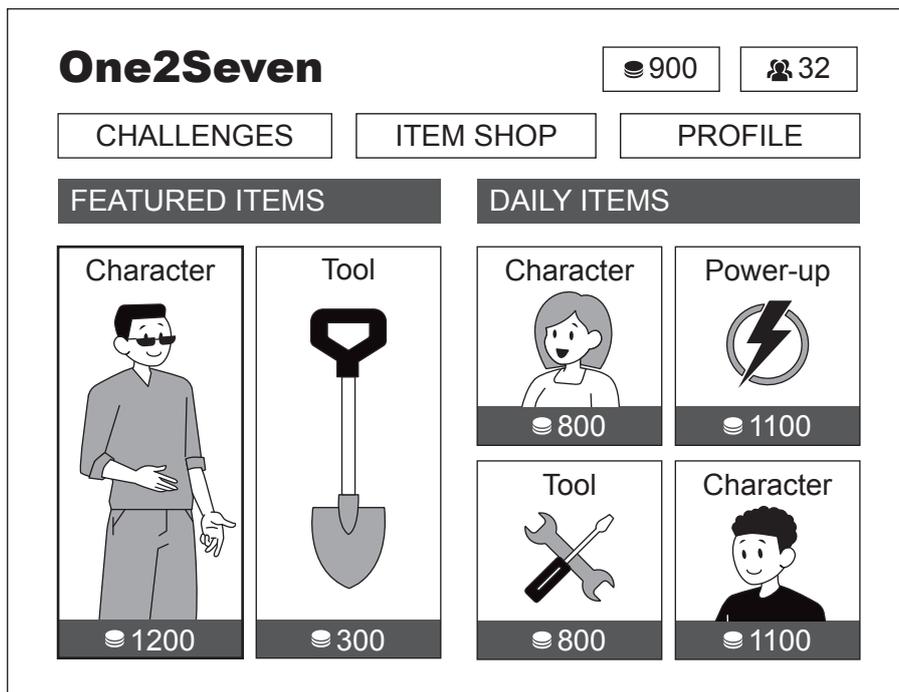
Answer **two** questions from this section. Each question is worth [20 marks].

#### 1. Microtransactions in gaming

Many free-to-play games on mobile phones (cell phones) use microtransactions to generate revenue for the gaming company.

Microtransactions are small payments that allow gamers to buy items, such as new tools, characters and power-ups, to enhance their ability in the game (see **Figure 1**).

**Figure 1: Microtransactions in a game**



Children often use a parent or guardian’s credit card for these microtransactions, but cryptocurrencies can also be used for them.

- (a) (i) Identify **two** benefits to gamers of using microtransactions in games. [2]
- (ii) Identify **two** characteristics of a cryptocurrency. [2]
- (iii) Describe how encryption ensures the security of microtransactions. [2]
- (b) (i) Explain **one** reason why a parent or guardian may not realize a microtransaction has taken place. [2]
- (ii) Explain **two** ways in which parents or guardians can manage their children’s in-game spending. [4]
- (c) To what extent is it acceptable for gaming companies to use microtransactions in games aimed at children? [8]



### 3. Deepfakes used for advertising

An artificial intelligence (AI) company uses synthetic digital media that allows its customers to select an avatar\* to deliver advertisements or promote products.

Users choose their avatar for the presentation. The avatar could look like a businessperson in a suit, a social media influencer or a doctor in a white coat (see **Figure 4**).

**Figure 4: An example of an avatar**



As AI systems have grown in power and sophistication, so have concerns about their ability to create increasingly realistic virtual versions of real people, also known as deepfakes.

The increase in the use of deepfakes has raised concerns about the spread of misinformation. Google has announced it will require any political advertisements that run on its platforms to disclose whether they have been created using AI tools.

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\* avatar: an image that represents a person online, such as in an online game

- (a) (i) Identify **two** types of synthetic digital media. [2]
- (ii) Identify **two** characteristics of synthetic digital media. [2]
- (iii) Identify **two** reasons why a customer may want to customize their avatar. [2]

Developers have tried to avoid the uncanny valley in the creation of the avatars.

- (b) (i) Explain **one** reason why developers need to avoid the uncanny valley. [2]
- (ii) Explain **one** advantage of using a social media influencer to promote a product. [2]
- (iii) Explain **one** disadvantage of using a social media influencer to promote a product. [2]
- (c) To what extent is it acceptable for a company to use synthetic digital media? [8]

## Section B

Answer **one** question from this section. Each question is worth [12 marks].

### 4. Wearable devices in healthcare

Wearable devices are an intervention for the challenge associated with global healthcare.

Wearable devices, such as smart watches (see **Figure 5**), are popular among people who want to improve their health and fitness.

**Figure 5: An example of a wearable device**



These wearable devices provide a range of functions that monitor vital signs (such as heart rate), the impact of activities (such as the number of calories used), and levels of activity (such as the number of steps taken). These wearable devices are linked to apps that store, share and analyse this data.

The data can be shared with healthcare and insurance companies. Some healthcare providers have started to provide wearable devices to customers.

It is claimed that the use of wearable technologies will bring benefits to society as a whole.

To what extent do you agree with this claim?

[12]

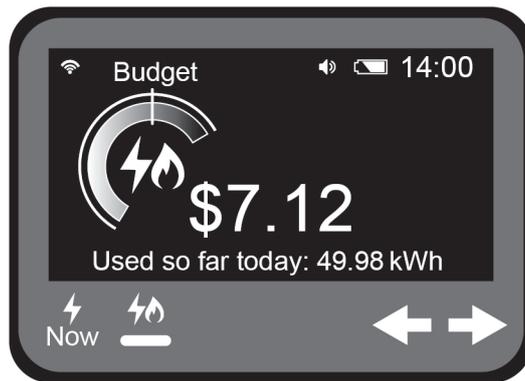
### 5. Smart meters and climate change

Excessive energy use is seen as a major contributor to the increase in global mean temperature, contributing to climate change.

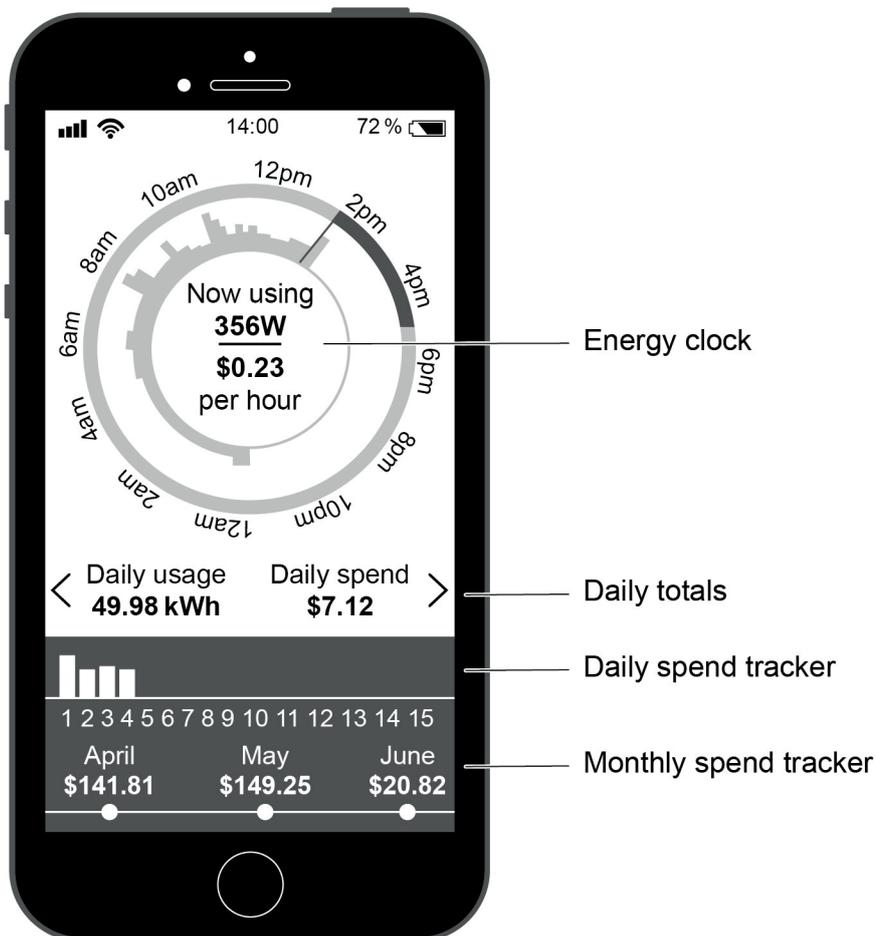
Smart energy meters are one example of an intervention that tries to address excessive energy use in homes.

A smart energy meter is a device that allows the user to see their energy usage (see **Figure 6**). This information can also be displayed on a smartphone app (see **Figure 7**).

**Figure 6: Energy usage display device in the home**



**Figure 7: Smartphone app that shows a user their energy usage**



Many governments would like to make the installation of smart energy meters compulsory.

It is claimed that the compulsory installation of smart meters will help address the increase in global mean temperature.

To what extent do you agree with this claim?

[12]

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**References:**

- Figure 2** Diy13, 2023. *An industrial drone on green field and sprays useful pesticides to increase productivity and destroy harmful insects. increase productivity. Modern technologies in agriculture - stock photo.* [online] Available at: <https://www.gettyimages.co.uk/detail/photo/an-industrial-drone-on-green-field-and-sprays-royalty-free-image/1823399078?phrase=drones+spraying+crops> [Accessed 22 April 2024]. Source adapted.
- Figure 4** Sethi, D., 2023. *Cheerful female doctor in white uniform holding clipboard stock photo – stock photo.* [online] Available at: <https://www.gettyimages.co.uk/detail/photo/cheerful-female-doctor-in-white-uniform-holding-royalty-free-image/1473337843?phrase=asian+doctor+with+stethoscope+white+background> [Accessed 28 March 2024]. Source adapted.
- Figure 5** AndreyPopov, 2018. *Heart Beat Monitor on Smart Watch – stock photo.* [online] Available at: <https://www.gettyimages.co.uk/detail/photo/heart-beat-monitor-on-smart-watch-royalty-free-image/915454448?phrase=smart+watch+> [Accessed 28 March 2024]. Source adapted.
- Figure 7** With permission from Amber Electric Pty Ltd.