

Information technology in a global society
Higher level and standard level
Paper 2

Thursday 18 May 2017 (morning)

1 hour 15 minutes

ARTICLE

Instructions to candidates

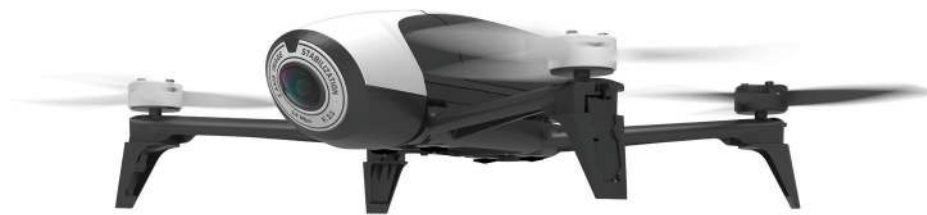
- Do not open this booklet until instructed to do so.
- This booklet contains the article required for information technology in a global society higher level and standard level paper 2.

Themes: Business and employment, home and leisure, politics and government

IT system: use of smartphones, WiFi, gps positioning and video streaming to operate drones

Small drones¹ that anyone can fly are transforming all kinds of activities. These drones are widely available, easy to assemble and increasingly affordable.

Figure 1: A smartphone communicating with a drone via WiFi



[Source: www.parrot.com]

5 A typical drone is controlled using an app² installed on a GPS-enabled smartphone. The drone also has a GPS receiver. The drone and the smartphone communicate using WiFi (see **Figure 1**). The user combines both video streamed from the drone's camera and GPS data to gather information about the drone's location. The user can also send GPS coordinates to the drone, making the drone fly to that point.

With their ability to fly to precise locations and hover, drones have many potential uses for businesses and government departments, and also as a leisure activity for members of the public.

10 Filmmakers and photographers use them to take aerial shots; engineers use them to inspect
pipelines and electrical power cables; emergency services use them to monitor dangerous
environments such as nuclear reactors, disaster sites and fires; government departments are
starting to use drones to reconstruct crime scenes and patrol borders; construction companies take
15 videos of building sites and houses for sale; some retailers are even experimenting with drones to
deliver items to customers.

However, there are concerns about the social and ethical implications of these uses. Some
owners fly drones without considering the consequences. They may not bother to follow the safety
guidelines and assume that they are unlikely to run into problems or get caught.

20 Concerns have been expressed over the use of information gathered by drones operated by
government departments, such as the police. There is also a worry that unauthorized people could
intercept and misuse data such as video being sent from the drone to the controller, or that the
drones themselves could be hijacked or used to carry out unethical or illegal activities.

[Source: CBS NEWS]

¹ drones: a drone is a flying robot that can be remotely controlled or can fly
autonomously

² app: application software, typically small, specialized programs downloaded
onto mobile devices; apps can also run on the internet, on a computer, or
on a cell/mobile phone or other electronic device
