MODULE I IMPACTS AND THE LAW · I3

Environmental impacts and e-waste

Original practice questions · 21 marks · ~25 minutes · OCR J277 spec 1.6.1

Name _____ Date _____

Instructions. Answer all questions in the spaces provided. The marks for each part are shown in brackets [ ]. Question 4 is marked by the quality of your extended response (*). The total for this worksheet is **21 marks**.

1

Total: 5 marks

Digital devices affect the environment when they are made, when they are used and when they are thrown away.

(a) Tick (✓) **one** box in each row to show the stage of a device's life when each environmental impact happens. **[5]**

Environmental impact	Making the device	Using the device	Disposing of the device
Rare metals are dug out of the ground by mining			
A room of servers runs day and night and needs air conditioning to stop it overheating			
Harmful substances leak out of broken printers that have been buried in landfill			
A factory uses large amounts of energy and water to produce microchips			
Unwanted computers are shipped abroad and burned in the open to recover the metal inside			

2

Total: 3 marks

(a) State what is meant by **e-waste**. **[1]**

(b) Explain why putting e-waste into landfill can harm the environment. **[2]**

3 **Total: 5 marks**

A city council has 400 desktop computers in its offices. In the past it replaced all of them every 3 years, even though most still worked. The council now plans to keep each computer for 6 years instead.

(a) The council will still need to get rid of some old computers. Give **two** ways the council could get rid of old computers that reduce the harm to the environment. **[2]**

1

2

(b) Explain **one** environmental benefit of keeping each computer for 6 years instead of 3 years. **[2]**

(c) State **one** possible environmental drawback of keeping each computer for 6 years instead of 3 years. **[1]**

4*

Total: 8 marks

A regional bus company plans to:
• stop selling paper tickets and printing paper timetables, and sell all tickets through a mobile phone app instead
• remove the ticket machines from all of its buses
• fit every bus with sensors that record its location, its fuel use and the air quality along its route.
The app and the sensor data will run on servers in a data centre that is always switched on.

Discuss the environmental impacts of this plan. **[8]**
In your answer you might consider:
• making and running the new technology
• what happens to the equipment that is no longer needed
• how the new technology could reduce harm to the environment.

Total for this worksheet: 21 marks