

Monitoring Case

(b) The weather station continuously monitors the sensors on the weather balloon.

Describe the monitoring process.

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[4]

(b) **Four from:**

Data is read by the sensors.

The data is converted to digital data/using the ADC.

The data is sent to the microprocessor/computer (in the ground base unit)...

...using a satellite link.

...by radio waves.

Graphs/results are automatically produced by computer.

Graphs are plotted against time.

Data is saved in the computer for later use.

[4]

Controlling Case

(c) The developers have used the results from the model to choose a computer controlled flood defence system. It will have a barrier which can open or close.

Describe the role of the microprocessor in such a system.

[5]

Question	Answer	Marks
15c	<p>Any five from:</p> <ul style="list-style-type: none"> <li>- The microprocessor reads the data from the sensor <li>- The microprocessor has a set of pre-set values stored <li>- The microprocessor compares the readings from the sensors with the pre-set values <li>- If higher the microprocessor sends a signal... <li>- ...to the actuator to close the barrier <li>- If lower the microprocessor sends a signal... <li>- ...to the actuator to open the barrier 	5