C3.1 Integration of body systems

What the Cell · DP Biology · note-taking sheet · statements C3.1.1–16

Name _____ **Date** _____

How to use this sheet: go through the slides and videos with it, then close them and write from memory. Use your own words and add page numbers from the book where you want more detail.

C3.1.1–2 Integration and the hierarchy

Textbook pp. 491–493

What is an **emergent property**? Give an example from a cheetah.

C3.1.3 Linking organs

Textbook pp. 493–495

	Nervous	**Hormonal**
Type of signal		
Travels by		
Speed		
Duration		
Effectors		

Give two examples of materials the blood carries between organs, naming where from and where to.

C3.1.4–5 Brain and spinal cord

Textbook pp. 496–498

List what the brain does as an integrating organ.

Distinguish conscious from unconscious processes, with an example of each. What does the spinal cord do for each?

C3.1.6–8 Neurons and nerves

Textbook pp. 498–500

Trace the route from touching a pen to moving your fingers. Include **sensory neuron**, **cerebral hemispheres** and **motor neuron**.

Sketch a transverse section of a nerve. Label the **protective sheath**, **myelinated fibre** and **unmyelinated fibre**.

C3.1.9 The pain reflex arc

Textbook pp. 501–502

Draw the arc through the spinal cord. Label the **pain receptor**, **sensory neuron**, **interneuron in grey matter**, **motor neuron** and **effector**.

C3.1.10 The cerebellum

Textbook p. 502

What does the cerebellum coordinate? What does it not do?

C3.1.11–13 Hormonal control

Textbook pp. 502–505

	Secreted by	Stimulus	Effects
Melatonin			
Epinephrine			

How do the hypothalamus and pituitary gland control the endocrine system?

C3.1.14 Feedback control of heart rate

Textbook pp. 506–507

Receptor	Monitors	Location
Baroreceptors		
Chemoreceptors		

Describe what happens when blood pressure falls. Include the **medulla** and **sinoatrial node**.

C3.1.15 Feedback control of ventilation rate

Textbook pp. 507–508

Explain why blood pH falls during exercise, and how this leads to faster breathing.

C3.1.16 Control of peristalsis

Textbook pp. 508–509

Which parts of the journey through the gut are under the CNS, and which are under the enteric nervous system?

Before you finish

Tick the ones you can explain without notes. Circle anything to ask about.

- ☐ Emergent properties
- ☐ Nervous and hormonal signalling
- ☐ Roles of brain and spinal cord
- ☐ Neuron and nerve
- ☐ The pain reflex arc
- ☐ The cerebellum
- ☐ Melatonin and epinephrine
- ☐ Hypothalamus and pituitary
- ☐ Heart rate control
- ☐ Ventilation rate control
- ☐ Peristalsis