### Study Objectives

The student should be able to:

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Assessment Criteria</th>
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<tbody>
<tr>
<td>1. Understand the importance of homeostasis in maintaining equilibrium in the body</td>
<td>1.1 Explain the term homeostasis</td>
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<tr>
<td>1.2 Evaluate, using examples, the importance of homeostasis in maintaining physiological equilibrium</td>
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<tr>
<td>2. Understand the function of the main components of the nervous system</td>
<td>2.1 Explain the relationship between structure and function of the nervous system</td>
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<tr>
<td>3. Understand the function of the main components of the endocrine system</td>
<td>3.1 By use of examples, explain how the endocrine system functions in the process of homeostasis through hormone action</td>
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<tr>
<td>3.2 Compare and contrast hormonal control with control through nerve action</td>
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<tr>
<td>4. Understand the function of the main components of the excretory system</td>
<td>4.1 Explain the relationship between structure and function of the excretory system</td>
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### Assessment Methodology

Assignment part or wholly undertaken under controlled conditions or a 2000 – 2500 word report.

### Grading of this unit

The following grade descriptors will be applied to the assessment of this unit:

1. Understanding of the subject
2. Application of Knowledge
3. Use of Information
4. Communication and Presentation
5. Quality

Please refer to the QAA Grade Descriptors for detail of the components of each descriptor.
<table>
<thead>
<tr>
<th>Indicative Content</th>
</tr>
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**Homeostasis and control**
Role of the negative feedback loop: sensors, integration centre and effectors as demonstrated by regulation of body temperature involving the role of the hypothalamus and the skin.
Role of positive feedback loop in the enhancement of an effect e.g. blood clotting, contractions of the uterus during childbirth.

**The Nervous System**
Divisions of the nervous system: CNS, PNS & ANS and their functions including sympathetic and parasympathetic system.
Structure of sensory, motor and interneurons and their organisation into the spinal reflex arc.
Structure of the spinal chord. Structure of the brain and major functions of its components: cerebral cortex, cerebellum, medulla oblongata, hypothalamus, Pituitary Gland.
Nerve impulses: the nerve cell and its ‘resting potential’; the mechanism of transmission of an impulse: action potential, saltatory conduction. Structure of synapses and the mechanism of synaptic transmission. Function of neurotransmitters e.g. acetylcholine, glycine in producing excitatory and inhibitory potential. Synaptic integration.

**The Endocrine System**
Regulation by chemical messengers; production of hormones in endocrine glands; characteristics of hormone control.
The location and function of the Posterior Pituitary Gland - release of antidiuretic hormone (ADH) for the control of osmoregulation.

**The Excretory System**
The anatomy of the kidney and excretory system.
The structure of the nephron and its function of filtration, reabsorption, excretion, osmoregulation and electrolyte balance. Role of ADH. Role of liver in in converting toxic ammonia resulting from protein and nucleic acid metabolism into less toxic urea.

Validation end date: 31 August 2019