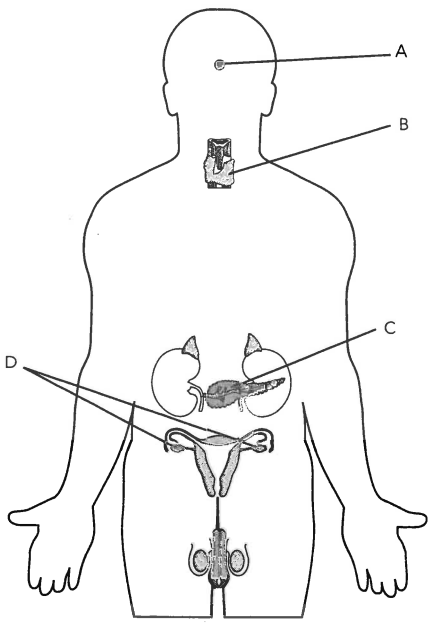
TRIAL TEST 2: THE ENDOCRINE SYSTEM

Time allowed:	**60 minutes**	**Section One –** Multiple Choice	30 marks
Total marks:	**100**	**Section Two –** Short Answer	50 marks
		Section Three – Extended Answer	20 marks

SECTION ONE – MULTIPLE CHOICE (30 MARKS)

1. An endocrine gland releases its products:
   (a) directly into the blood.
   (b) directly into the target organ.
   (c) all the time.
   (d) only at puberty.

2. Endocrine glands produce substances which:
   (i) affect every cell in the body.
   (ii) affect only some cells and tissues.
   (iii) are carried by the blood.
   (iv) travel down ducts.
   (v) are only released on stimulation by the hypothalamus.
   (a) (i) and (iii)
   (b) (i), (iii) and (v)
   (c) (ii) and (iii)
   (d) (ii) and (v)



3. On the diagram above:
   (a) A is the pituitary gland, B is the thyroid gland, C is the pancreas and D is the testes.
   (b) A is the pituitary gland, B is the parathyroid gland, C is the pancreas and D is the adrenal gland.
   (c) A is the pituitary gland, B is the thyroid gland, C is the pancreas gland and D is the ovary.
   (d) A is the pituitary gland, B is the parathyroid gland, C is the ovary and D is the testes.

4. The pancreatic hormone that causes glycogen to be converted into glucose is:
   (a) insulin.
   (b) calcitonin.
   (c) thyroxine.
   (d) glucagon.

5. Adrenalin is produced in the:
   (a) adrenal medulla.
   (b) adrenal cortex.
   (c) anterior lobe of the pituitary gland.
   (d) posterior lobe of the pituitary gland.

6. Consider the flowing statements.
   (i) Generally have low blood sugar.
   (ii) Generally have high blood sugar.
   (iii) Can control their blood sugar levels with diet.
   (iv) Can control their blood sugar levels with insulin.
   (v) Can control their blood sugar levels with glucagon.

   Which of the following refer to people who suffer from Diabetes Type 2?
   (a) (i) and (iii)
   (b) (i) and (iv)
   (c) (ii) and (iii)
   (d) (ii) and (v)

7. Nervous stimulation causes hormones to be released from the hypothalamus. These stimulate the anterior pituitary to produce and release adrenocorticotropic hormone (ACTH). This in turn stimulates the adrenal cortex to produce cortisol which promotes metabolism. The level of cortisol is detected in the blood and suppresses the release of ACTH.

   Which of the flow diagrams below shows this information?
   (a) Hypothalamus → pituitary → adrenal cortex → cortisol

   (b) Hypothalamus → pituitary → adrenal cortex → cortisol
   feedback

   (c) Hypothalamus → pituitary → adrenal cortex → cortisol
   feedback

   (d) Hypothalamus → pituitary → adrenal cortex → cortisol
   feedback

8. Which of the following is incorrect?
   (a) Anterior pituitary → human growth hormone → body cells.
   (b) Anterior pituitary → melanin stimulating hormone → skin cells.
   (c) Anterior pituitary → follicle stimulating hormone → production of sperm in testes.
   (d) Anterior pituitary → antidiuretic hormone → kidney tubules.

9. Consider this flow diagram:

   Hypothalamus → pituitary gland → oxytocin → contractions of the uterine wall.

   Which statement about it is correct?
   (a) It is controlled by negative feedback.
   (b) It is controlled by positive feedback.
   (c) Oxytocin is produced from the anterior pituitary.
   (d) Oxytocin controls the release of milk from the breast.

10. The endocrine system:
    (a) Responds faster than the nervous system and has a prolonged effect.
    (b) Responds slower than the nervous system and has an immediate effect.
    (c) Responds slower to stimuli than the nervous system and has a prolonged effect.
    (d) Responds faster to stimuli than the nervous system and can stimulate many tissues at the same time.

SECTION 2 – SHORT ANSWER (50 MARKS)

1. Write the appropriate term for each of the following phrases.

    (i) The 'master' gland.

    _____

    (ii) Gland that secretes hormones controlling blood sugar levels.

    _____

    (iii) The part of the brain that connects nerves with hormones.

    _____

    (iv) The discharge of the ovum from follicular cells.

    _____

    (v) The part of a cell that produces protein hormones.

    _____

    (vi) The cells that manufacture insulin.

    _____

    (vii) The gland mainly concerned with controlling the rate of metabolism.

    _____

    (viii) The hormone that causes uterine muscles to contract during child birth.

    _____

    (ix) Hormone that brings about maturation of the ovarian follicle.

    _____

    (x) Hormone that causes the production of milk in the breast.

    _____

[10 marks]

2. Define 'hormone'.

_____

_____

_____

[2 marks]

3. What is meant by the phrase 'specificity of hormones'?

_____

_____

[2 marks]

4. Where are the following hormones produced?

(a) thyroxine

_____

(b) cortisol

_____

(c) glucagon

_____

(d) progesterone

_____

(e) antidiuretic hormone

_____

(f) luteinising hormone

_____

[6 marks]

5. What is the role of the hypothalamus in the endocrine system?

_____

_____

_____

_____

[4 marks]

6. (a) What are three effects that hormones produce in the body in response to an emergency?

(i) _____

(ii) _____

(iii) _____

[3 marks]

(b) Which gland is involved?

_____

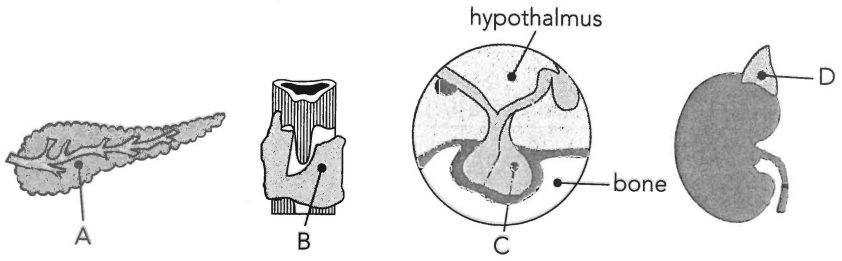
[1 mark]

(c) Name the principal hormone that produces the effects identified in (a).

_____

[1 mark]

7.



(a) What is a common feature of A, B, C and D?

_____

[2 marks]

(b) Identify the glands shown in A, B, C and D.

A _____

B _____

C _____

D _____

[4 marks]

(c) What is the relationship between C and B?

_____

_____

[2 marks]

(d) Name one chemical produced by A

_____

[1 mark]

and D.

_____

[1 mark]

8. Describe three differences between nerve and hormonal action.

[6 marks]

9. Describe the feedback mechanism involved in the regulation of thyroid stimulating hormone.

[5 marks]

SECTION 3 – EXTENDED ANSWER (20 MARKS)

Using examples, discuss how endocrine glands help to maintain homeostasis in the body.

END OF TEST (100 MARKS)