**Endocrine System**

Q 2016 15 b

Answer the following questions in relation to the typical human female menstrual cycle.

* + 1. State **one** change that occurs, **and** the approximate day(s) of the cycle on which it occurs
       1. in the endometrium.
       2. in the ovary.
    2. FSH and LH each plays a role in the cycle. Where in the body are these hormones produced?
    3. State **one** role of **each** of these hormones in the cycle.
    4. Name **two** other hormones that play a role in the cycle.
    5. Stating clearly which of the two hormones you have chosen from (iv), give a function in the cycle of that hormone.

MS 2016 15 b

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| --- | --- | --- | --- | --- | --- | --- |
| (b) | (i) | 1. *Endometrium:* | | Breaks down (shed) | (Days) 1 – 5 |  |
|  |  |  |  | **or**  Thickens | (Days) 6 – 28 | **3 + 3** |
|  |  | 2. *Ovary:* | | Follicle (or ovum or egg) matures | (Days) 1 – 14 |  |
|  |  |  |  | **or**  Ovulation | (Days) 13 – 15 | **3 + 3** |
|  |  |  |  | **or**  Corpus luteum develops | (Days) 15 – 28 |  |
|  | (ii) | *Where FSH and LH produced:* \*Pituitary (gland) | | |  | **3** |
|  | (iii) | *FSH:* | Stimulates follicle (egg) to develop (in ovary) **or** stimulates (ovary) to | | |  |
|  |  |  | produce oestrogen **or** stimulates LH (production) | | | **3** |
|  |  | *LH:* | Stimulates ovulation **or** described **or** causes (Graafian follicle) to develop | | |  |
|  |  |  | into corpus luteum **or** stimulates progesterone (production) | | | **3** |
|  | (iv) | *Other hormones:* Oestrogen**/** progesterone | | |  | **2(3)** |
|  | (v) | *Fn oestrogen:* | | Causes endometrium to build up **or** inhibits FSH **or** stimulates LH | |  |
|  |  |  |  | **OR** |  | **3** |
|  |  | *Fn progesterone:* | | Maintains endometrium **or** inhibits LH **or** inhibits FSH | |  |

Q 2013 10 a,b

(a) (i) What term is used for glands that secrete hormones?

1. How do these glands differ from those that do not secrete hormones?
2. Explain why the pancreas may be described as a *dual-function* gland.
3. Answer the following by reference to hormones, other than sex hormones, which you have encountered in the course of your studies.
   1. What is the chemical nature of many hormones?
   2. In the case of **each** of **two named** hormones secreted in the human body state:
      1. The precise location of the gland that secretes it.
      2. A function of the hormone.
   3. In the case of **one** of the hormones referred to in part (b) (ii):
      1. Give a deficiency symptom.
      2. Give a symptom of excess secretion.
      3. Give a corrective measure for **either** its deficiency **or** its excess, clearly stating which you have chosen.
   4. Explain why hormonal responses are slower than nervous responses.

MS 2013 10 a,b

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| --- | --- |
| 1. (a) (i) \*Endocrine    1. Ductless    2. Hormone (or insulin) secretion & non-hormone (enzyme) secretions   **or** has endocrine and exocrine function (or described) | **3**  **3**  **3** |
| 1. (i) Protein    1. Hormone name       1. Gland location       2. Hormone function    2. 1. Deficiency symptom 2. Excess symptom 3. Corrective measure   (iv) Hormones travel in blood **or** are chemical Electrical transmission in nerves | **3** |
| **2(2)** |
| **2(2)** |
| **2(2)** |
| **2** |
| **2** |
| **2** |
| **3** |
| **3** |

Q 2011 11 c

(c) (i) What is a hormone?

(ii) State two ways in which hormones are similar to the group of substances referred to in (b)(i).

(iii) 1. What is meant by feedback in relation to hormone action?

2. Give a brief account of the feedback mechanism for a named hormone.

(iv) Describe one deficiency symptom of a named hormone. (24)

MS 2011 11 c

|  |  |  |  |
| --- | --- | --- | --- |
| (c) | (i) | A chemical messenger **or** product of endocrine (or ductless) gland | **3** |
|  | (ii) | Produced in one location / acts in different location / prolonged effect  ***Any 2*** | **2(3)** |
|  | (iii) | 1. When the level of a hormone (in the blood) controls (the production) of another (or itself) 2. Named hormone   inhibits (or causes production of) a named hormone | **3** |
|  | **3** |
|  | **3** |
|  | **3** |
|  | (iv) | One deficiency symptom of a named hormone | **3** |

Q 2010 11 c

1. (i) What term is used to describe the glands that secrete hormones in the human body?
2. 1. Name a hormone-producing gland in the human body.
3. Where in the body is the gland located?
4. Name a hormone that this gland secretes.
5. State a role of this hormone.
6. Describe what happens if the body experiences a deficiency of this hormone.
7. Give **two** examples of the use of hormone supplements.

MS 2010 11 c

|  |  |  |  |
| --- | --- | --- | --- |
| (c) | (i) | \*Endocrine (or ductless) | **3** |
|  | (ii) | 1. Name of a hormone-producing gland | **3** |
|  | 2. Location of named gland | **3** |
|  | 3. Hormone secreted by named gland | **3** |
|  | 4. Role of hormone | **3** |
|  | 5. Description of deficiency symptom [*Accept named condition*] | **3** |
|  | (iii) | e.g. 1. Treatment of diabetes 2. Contraception | **2(3)** |

Q 2008 13 c

1. (i) Suggest **two** situations which may result in a drop in the water content of the blood.
2. When the water content of the blood drops a hormone is released. Name this hormone and the endocrine gland from which it is secreted.
3. Give a precise target area for this hormone. How does the hormone reach the target area?
4. Explain the role of the hormone at its target area, when the water content of the blood is low. **(24)**

2008 13 c

|  |  |  |  |
| --- | --- | --- | --- |
| (c) | (i) | infection / hot conditions **or** perspiration **or** exercise / high salt intake / low water intake / diuretic(s) | **2(3)** |
|  | (ii) | \*ADH (vasopressin) | **3** |
|  | \*pituitary | **3** |
|  | (iii) | distal tubule **or** collecting duct | **3** |
|  | in the blood | **3** |
|  | (iv) | (makes walls) more permeable (resulting in) more absorption of water | **6** |

Q 2007 4

The graphs illustrate changes in the levels of two hormones, A and B, which are involved in the development of the endometrium, during the human female menstrual cycle.

**A**



**1**

**5**

**9**

**13**

**17**

**21**

**25**

**day**

**Horm one level**

**B \_ \_ \_**

(a) Name one of these hormones…………

1. What happens in the ovary around day 14 of the cycle?
2. Apart from the two hormones illustrated, another hormone called FSH has a role in the cycle.
   1. Where is FSH produced?
   2. Give one function of FSH…………………………………
3. Which graph, A or B, represents the hormone secreted by the *corpus luteum* (yellow body)? ..
4. Draw a line graph in the space above A and B to illustrate the changes that take place in the thickness of the endometrium over the course of the cycle.

MS 2007 4

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| --- | --- | --- | --- |
| **Q 4.** |  | **2(5) + 5(2)** |  |
|  | **(a)** | oestrogen **or** progesterone | **3** |
|  | **(b)** | ovulation **or** described | **3** |
|  | **(c)** | (i) pituitary | **3** |
|  |  | (ii) production **or** development of follicle (egg) **or** (stimulate) oestrogen production | **3** |
|  | **(d)** | B | **3** |
|  | **(e)** | curve descending [days 1 – 5, *allow* up to day 9] | **3** |
|  |  | curve ascending [after day 5] | **2** |

Q 2007 15 b

* 1. (i) Other than the secretion of hormones, how does an endocrine gland differ from an exocrine gland?

1. State **two** ways in which hormone action differs from nerve action.
2. Copy the following table into your answer book and fill each of the empty boxes.

|  |  |  |  |
| --- | --- | --- | --- |
| **Endocrine Gland** | **Location** | **Hormone** | **Role of Hormone** |
|  | Pancreas | Insulin |  |
| Thyroid Gland |  |  |  |
|  |  |  | “fight or flight” |

1. In the case of a **named** hormone give:
   1. a deficiency symptom,
   2. a corrective measure.

MS 2007 15 b

|  |  |  |  |
| --- | --- | --- | --- |
| **(b)** | **(i)**  **(ii)** | ductless or secretes into blood stream  chemical transmission / slower action / longer lasting effect / many target organs | **3**  **2(3)** |
|  |  | |  |  |  |  | | --- | --- | --- | --- | | **Endocrine Gland** | **Location** | **Hormone** | **Role of Hormone** | | Islets of Langerhan | Pancreas | Insulin | Regulates blood sugar levels | | Thyroid Gland | Neck | Thyroxine | Controls metabolism | | Adrenal Gland | Kidney | Adrenaline | “fight or flight” | | **8(2)** |
|  | **(iv)** | *Named hormone*: | **1** |
|  |  | 1. *deficiency symptom:* | **2** |
|  |  | 2. *corrective measure:* | **2** |

Q 2005 14c

* 1. Answer the following questions in relation to systems of response to stimuli in the human body.
     1. The pancreas is both an exocrine gland and an endocrine gland. Explain the underlined terms.
     2. Name a product of the endocrine portion of the pancreas and state one of its functions.

MS 2005 14 c

|  |  |
| --- | --- |
| (c) (i) *Exocrine*: ducted or explained | **3** |
| *Endocrine* – ductless or hormone producing | **3** |
| (ii) Insulin or glucagon | **3** |
| Regulates blood sugar or regulates sugar (level) or correct explanation | **3** |