Hormones Assignment Class Section

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Mark= /45

Take home sheet attached=(1 mark)

Take home sheet ALL COMPLETED=(1 mark)

1. Woman comes to visit the doctor. She has then following symptoms: [Fatigue](http://en.wikipedia.org/wiki/Fatigue_(medical)), increased sensitivity to cold[, depression](http://en.wikipedia.org/wiki/Depression_(mood)) and goitre.
2. What disorder does she have?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(1 mark)

1. List some other symptoms the woman might be suffering from if she has this disorder.

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1. marks)
2. Damage to which gland could cause an imbalance in the amounts of calcium, phosphorus and magnesium in the bones and blood? Give a reason for your answer.

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(2 marks)

1. Using a suitable table answer the following extended question

Based on how they work when they reach a target cell classify hormones into two groups. State the chemicals that each group is made from. Name and give three examples of both groups. Then state how they work when they reach their target cell.

(22 marks)

1. When lipids arrive in the small intestine they must be emulsified before lipase can act on them.
2. What do we call the chemicals that do this emulsification and where are they produced and stored.

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(3 marks)

1. The presence of lipids in the small intestine triggers the wall of the small intestine to release a hormone which brings about the release of the emulsifying chemical mentioned in question 3. a. What do we call this hormone?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

(1 mark)

1. The pineal gland is a pea-sized gland located just above the middle of the brain. During the day the pineal is inactive. When the sun goes down and darkness occurs, the pineal is "turned on" by another part of the brain. It begins to actively produce a hormone. Usually, this occurs around 9 pm. Levels of this hormone in the blood rise sharply stay elevated for about 12 hours.
2. What is this hormone called?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(1 mark)

1. Why is the time that this hormone is present in the blood important?

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(1 mark)

1. The diagram below shows the production of the hormone thyroxin. Fill in the missing words.

|  |
| --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_gland |

\_\_\_\_\_\_\_\_\_ hormone

|  |
| --- |
| \_\_\_\_\_\_gland |

Negative

Feedback

Negative

feedback

\_\_\_\_\_\_\_\_\_\_ hormone

|  |
| --- |
| \_\_\_\_\_\_\_\_\_\_\_gland |

|  |
| --- |
| Thyroxin hormone |

(5 marks)

1. Some symptoms of Addison's disease include reduced blood glucose, and low blood pressure, which can impact the act of standing, causing dizziness or fainting. It is caused by damage to the Adrenal cortex.
2. Using what you have learned about hormones, which hormone do you think is involved here?

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(1 mark)

1. Do you think the hormone is being overproduced or under produced?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(1 mark)

1. Can you suggest why the disease has these symptoms?

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(2 marks)

Marking key

Uses table=1 mark

Table is well structured=1 mark

|  |  |  |  |
| --- | --- | --- | --- |
|  | Hormone group | | |
|  | | | Marks |
|  | Protein and peptide | Steroid hormones | 2 |
| Examples | Insulin, glucagon and prolactin | Cortisol, oestrogen and testosterone | 6 |
| Chemicals they are made from | Amino acids | Cholesterol | 2 |
| How they work | When these hormones get to the target cell they bind to Receptor Proteins (1)on the Surface of the cell(1). This starts a chain of events which leads to generation of second messengers within the cell(1). The second messengers then trigger a series of molecular changes in the cell(1) | Hormones enter the cell(1) and bind to Receptors inside target cells(1), in the cytoplasm or nucleus(1). The hormone and the receptor join to form a Hormone-Receptor complex(1). The hormone-receptor complex binds to promoter regions of a gene(1). This can stimulate or sometimes inhibit transcription from those genes(1). | 10 |
|  | total | | 20 |