

Chapter 5- Endocrine System and Adolescence

Multiple Choice Questions:

1. Put a tick mark (✓) against the correct alternative in the following statements:

(a) Cortisone hormone is secreted by:

1. Medulla of adrenal
2. Cortex of adrenal
3. Pancreas
4. Thyroid

Solution: 2. Cortex of adrenal

(b) Which one of the following hormones stimulates the breakdown of glycogen in the liver into glucose:

1. Insulin
2. Adrenaline
3. Glucagon
4. Thyroxine

Solution: 3. Glucagon

(c) Which one of the following hormones converts excess of glucose into glycogen:

1. Glucagon
2. Thyroxine
3. Insulin
4. Adrenaline

Solution: 3. Insulin

(d) Which one of the following glands is also called master gland:

1. Pituitary gland
2. Adrenal gland
3. Thyroid gland
4. Ovary

Solution: 1. Pituitary gland

(e) The emergency hormone to face the danger or to fight is secreted by:

1. Islets of Langerhans
2. Adrenal cortex
3. Pituitary
4. Adrenal medulla

Solution: 4. Adrenal medulla

(f) Which one of the following endocrine glands produce its hormone in large quantities as a result of emotional stimulation?

1. Thyroid
2. Islets of Langerhans
3. Adrenal medulla
4. Adrenal cortex

Solution: 3. Adrenal medulla

The adrenal medulla produces its hormone in large quantities as a result of emotional stimulation.

(g) In humans, increased thyroxine production results in (tick the correct Solution):

1. Increased metabolism
2. Decreased metabolism
3. Dwarfism
4. Cretinism

Solution: 1. Increased metabolism

Question 1.

What is a hormone?

Solution:

The secretions of the endocrine glands are called Hormones; they are mixed directly into the blood and are transferred to the target organs.

Question 2.

In the table given below, fill in the blanks by naming endocrine glands, the hormones they secrete, and the function they perform, in a normal person.

Solution:

S.No	Name of the gland	produced	Function
1.	Thyroid	Thyroxine	Control of the metabolic rate
2.	Pancreas	Insulin	Regulation of sugar in the blood
3.	Adrenal	Adrenaline and cortisone	Preparing the body for action
4.	Pituitary	(i) Growth hormone (ii) Thyroid stimulating hormone	(i) for growth (ii) stimulates the thyroid gland to secrete thyroxine

Question 3.

Match the items in Column A with those in Column B.

Column A

- (a) Cretinism
- (b) Diabetes mellitus
- (c) Increased metabolic rate

Column B

- (i) Insufficient insulin in blood.
- (ii) Over secretion of thyroxine
- (iii) Under development

Solution:

Column A

- (a) Cretinism
- (b) Diabetes mellitus
- (c) Increased metabolic rate
- (d) Simple goitre
- (e) Growth hormone

Column B

- (iii) Under development
- (i) Insufficient insulin in blood.
- (ii) Over secretion of thyroxine
- (iv) Insufficient iodine in
- (v) Insufficient insulin in the blood.

Question 4

Name the source and the function of each of the following hormones:

Hormone	Source	Function
(a) Glucagon		
(b) Thyroxine		
(c) Adrenaline		
(d) Insulin		
(e) Cortisone		

Solution:

Hormone	Source	Function
(a) Glucagon	Pancreas	Glycogen is broke down to glucose. Raises sugar in the blood.
(b) Thyroxine	Thyroid gland	Control of the metabolic rate
(c) Adrenaline	Adrenal gland	Prepare the body to face emergency, stress
(d) Insulin	Pancreas	Regulation of sugar in the blood
(e) Cortisone	Adrenal cortex	Regulates carbohydrate metabolism. Its deficiency causes addison's disease

Question 5.

What is the difference between an exocrine gland and an endocrine gland?

Solution:

Exocrine glands are salivary glands, pancreas, etc. they send their secretions through ducts directly to the target, or On the other hand, the endocrine glands are ductless glands.

Their secretions are called hormones, which are poured directly into the blood and are thus carried to the target organs.

Question 6.

Why is pituitary gland called "master gland"?

Solution:

A "master gland" that produces hormones that control other glands and many body functions including growth (growth hormone, Thyroid and Gonad stimulating hormone) are called pituitary gland.

Question 7.

Briefly write about the importance of physical hygiene during adolescence.

Solution:

Physical hygiene also named as Personal hygiene plays a crucial role in maintaining health during adolescence. The teenager should follow the below-mentioned activities to promote their health:

- 1. Proper and Safe Food:** The stage of rapid growth and development is called adolescence. Hence, a teenager should take proper care of their diet. They should take a properly balanced diet that provides proteins, carbohydrates, fats, minerals and vitamins. They should take freshly prepared food and avoid stale food. They should take milk, fruits and fresh vegetables.
- 2. Proper life Style:** Regular Exercise and sleep are necessary for maintaining good health. A teenager should avoid long hours of continuous table work, television watching. A teenager should not consume alcohol, drugs or smoking.
- 3. Cleanliness:** Teenager should take a bath regularly. Before and after having meals they should always wash their hands. Brushing up teeth after every meal. They should always change and wear washed clothes especially undergarments. Regular toilet habits should be adopted for maintaining good health. A teenager must keep their feet cleaned and protected. Injuries due to bacteria like tetanus, hookworms and insects may be issued if the barefoot walk is undertaken. They must wash and comb their hairs regularly. All body parts must be washed and cleaned every day. If cleanliness is not maintained there may occur chances of catching a bacterial infection. Girls should take special care of cleanliness during the time of the menstrual period.
- 4. Physical Exercise:** In order to keep the body fit and healthy, teenagers should walk, exercise and play outdoor games regularly in the fresh air. Playing Outdoor games reduces the stress and strain of adolescence.

Question 8.

Briefly discuss any four activities which can be practised to overcome stress.

Solution:

Stress is a state of mental or emotional strain and in simple terms it is called as tension.

The stress can be controlled or reduced by following the below-mentioned steps:

- 1. Yoga:** Physical poses, controlled breathing, and meditation or relaxation is a combined mind practice called yoga. Yoga helps in reducing stress by:
 - (a) Increasing Flexibility
 - (b) Increasing muscle strength and tone.
 - (c) Improving respiration, energy and vitality.

2. **Exercise:** Exercise or Running for 30 to 45 minutes at least three times a week reduce stress and keeps the body much healthier.
3. **Proper sleep schedule:** Improving your sleep schedule also helps in reducing the stress.
4. **Reading** is a great way to calm your mind and to gain more knowledge.
5. **Practice Hobbies of your interest:** One should keep practising their hobbies as it helps in reducing the stress. Enjoy playing guitar, piano or listening to music or doing riddles.

