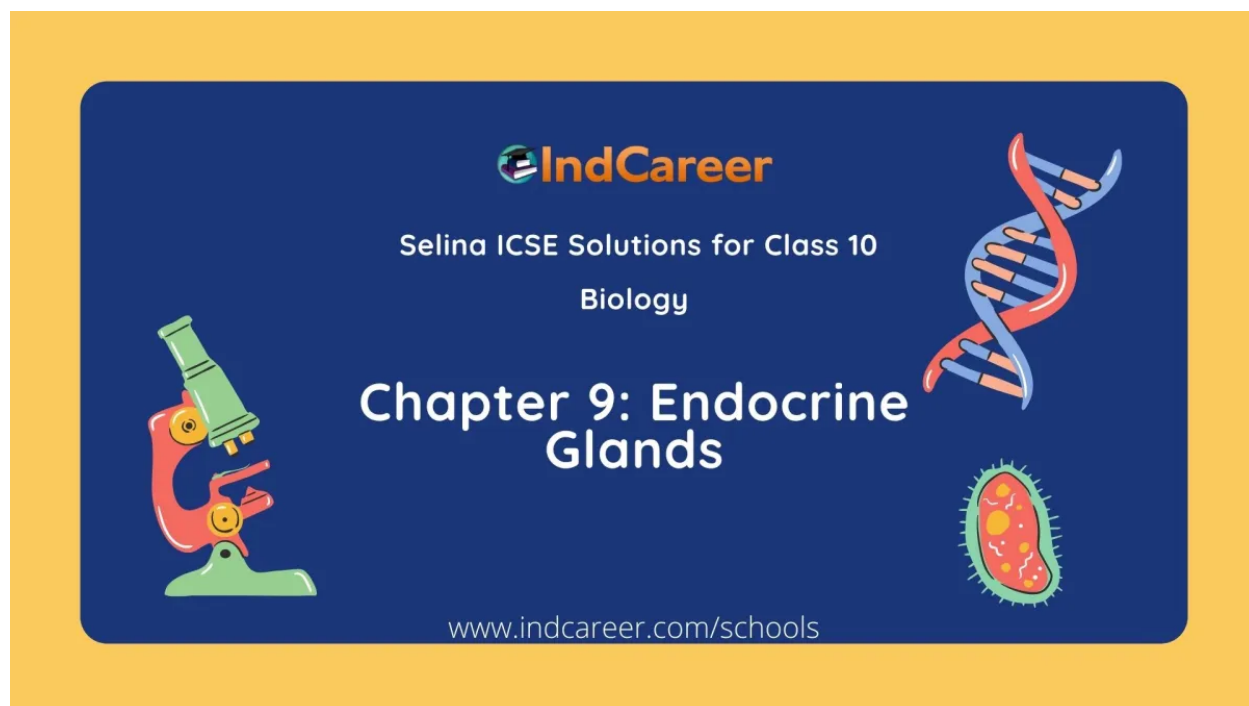


Selina Class 10 ICSE Solutions Biology :

Chapter 9- Endocrine Glands



For any clarifications or questions you can write to **info@indcareer.com**

Postal Address

IndCareer.com, 52, Shilpa Nagar, Somalwada Nagpur - 440015
Maharashtra, India

WhatsApp: +91 9561 204 888, **Website:** <https://www.indcareer.com>

<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>



Selina Class 10 ICSE Solutions Biology :

Chapter 9- Endocrine Glands

Class 10: Biology Chapter 9 solutions. Complete Class 10 Biology Chapter 9 Notes.

Selina Class 10 ICSE Solutions Biology : Chapter 9- Endocrine Glands

Selina 10th Biology Chapter 9, Class 10 Biology Chapter 9 solutions

Exercise 1

Solution A.1.

(c) pancreas

Solution A.2.

(b) thyroid

Solution A.3.

(c) alcohol

Solution B.1.

(a) Insulin, glucagon, somatostatin

(b) Adrenaline

(c) Hypoglycemia

(d) Insulin

(e) Adrenaline

<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>

(f) Anti-diuretic hormone (Vasopressin)

(g) Adrenaline

Solution B.2.

If there was hyposecretion of the thyroid gland in a child; the child will suffer from cretinism. The symptoms of cretinism are dwarfism, mental retardation, etc.

Solution B.3.

(a) Prostate

(b) Scurvy

(c) Cretinism

(d) Cortisone

Solution B.4.

(a) Larynx

Reason- Larynx is the sound box while the rest three i.e. glucagon; testosterone and prolactin are hormones.

(b) Penicillin

Reason – Penicillin is an antibiotic while adrenaline; insulin; thyroxine are hormones.

(c) Adrenaline

Reason – Adrenaline is a hormone while the stomach, ileum and liver are the organs of the digestive system.

(d) Insulin

Reason- Insulin is secreted by the pancreas while TSH, GH, ADH are the hormones secreted by the pituitary gland.

(e) Iodine

<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>

Reason- Iodine is required for the synthesis of thyroxine hormone. While cretinism, goitre, myxoedema are the deficiencies occur due to the deficiency of thyroxine.

Solution B.5.

Column I	Column II
1. Beta cells of islets of Langerhans	(g) Insulin
2. Thyroid	(c) Exophthalmic goitre
3. Cretinism	(h) Under secretion of thyroxine in a child
4. Addison's disease	(b) Glucocorticoids
5. Hypothyroidism	(e) Thyroxine
6. Myxoedema	(a) condition due to under secretion of thyroxine in adults
7. Adrenaline	(d) Increases heart beat
8. Cortisone	(f) Adrenal cortex

Solution B.6.

Solution C.1.

(a) True

Reason- Adrenaline is described as emergency hormone because during any emergency situation more adrenaline is secreted which makes the heart beat faster, increases the breathing, releases more glucose into the blood stream to fulfill the energy requirement.

(b) False

Reason- The two different kinds of diabetes are diabetes insipidus caused due to insufficient secretion of vasopressin and the other is 'diabetes mellitus' caused due to hyposecretion of insulin but they cannot be described as mild and severe.

<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>

(c) True

Reason-Iodine is an active ingredient in the production of the thyroxine hormone.

(d) True

Reason- Pituitary gland controls the functioning of all the other endocrine glands.

(e) True

Reason- Hormones are poured directly into blood the blood stream and control physiological processes by chemical means. Their action depends on the feedback mechanism.

(f) True

Reason- Gigantism and dwarfism are controlled by the growth hormone from the pituitary gland. Growth hormone is much more active in children for their normal body growth along with which necessary substance required for the synthesis of growth hormone need to be consumed.

Solution C.2.

Endocrine glands are ductless glands, means they pour their secretion i.e. hormones directly into the blood stream while the other glands are exocrine glands which have ducts. Through ducts they pour their secretions (not hormones) into the blood stream.

Solution C.3.

Hormones unlike enzymes are secreted by the endocrine glands only. Also the hormones unlike the enzymes are poured directly into the blood. Hormones can be peptides, steroids, amine but all enzymes are proteins.

Solution C.4.

Chemically hormones are peptides, amines or steroids. They are involved in regulating the metabolism of the body. They can bring about specific chemical changes during metabolic process. Therefore hormones can be termed as 'chemical messengers'.

Solution C.5.

Iodine is an active ingredient in the production of the thyroxine hormone secreted by the thyroid gland. Thyroxine hormone is a very essential hormone for our body. In case of its abnormal

<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>

secretions a person may suffer certain severe disorders. Therefore, it is an important nutrient for our body.

Solution C.6.

Adrenaline is the hormone which prepares the body to meet any emergency situation. Adrenaline makes the heart beat faster. At the same time, it stimulates the constriction of the arterioles of the digestive system reducing the blood supply of the digestive system which makes the mouth dry.

Solution C.7.

If one adrenal gland is removed, the other one gets enlarged. This is to meet the requirement of hormones produced by the body.

Solution C.8.

1. **Diabetes mellitus:**

Cause – under secretion of Insulin hormone

Symptoms – excretion of great deal of urine with sugar, Person feels thirsty and loss of weight. In severe cases, the person may lose the eye sight.

2. **Diabetes insipidus:**

Cause – Under secretion of Anti-diuretic hormone

Symptoms – frequent urination resulting in loss of water from body and the person feels thirsty.

Solution C.9.

The Himalayan soil is deficient in iodine. Thus, the food grown in such soil also becomes iodine deficient. Due to this reason, when Himalayan people consume iodine deficient food, they do not get the proper intake of iodine. Therefore, people living in the low Himalayan hilly regions often suffer from goitre.

Solution C.10.

S.No.	SourceGland cells	Hormone produced	Chief function	Effect of over secretion	Effect of under secretion
-------	----------------------	---------------------	-------------------	-----------------------------	---------------------------------

<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>

1.	Thyroid	thyroxine	Regulates basal metabolism	Exophthalmic goiter	Simple goiter, cretinism in children and myxoedema in adults
2.	Beta cells of Islets of Langerhans	Insulin	Promotes glucose utilization by the body cells	Hypoglycemia	Diabetes mellitus
3.	Anterior pituitary	Growth hormone	Promotes growth of the whole body	Gigantism	Dwarfism
4.	Posterior pituitary	Vasopressin	Increases reabsorption of water from kidney tubule	More concentrated and less amount of urine	Diabetes insipidus

Solution C.11.

Solution C.12.

Gland	Secretions	Effect on body
Ovary	oestrogen	development of secondary sexual characteristics
Alpha cells of islets of Langerhans	Glucagon	Raises blood sugar level
Thyroid	Hypersecretion of thyroxine	Protruding eyes
Anterior pituitary	Hypersecretion of Growth hormone	Gigantism

<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>

Solution D.1.**Hormonal Response**

Hormonal response is slow.

Hormones are chemical messengers transmitted through blood stream.

This response brings about a specific chemical changes. Therefore it regulates the metabolism.

Nervous Response

Nervous response is immediate.

Nerve impulses are transmitted in the form of electro-chemical responses through nerve fibres.

This response does not bring any chemical change during metabolism.

Solution D.2.**Action of Hormones**

The effect of hormones is wide spread in the body. They can show their effect on more than one target site at a time.

The effect of hormones can be short-lived or long lasting.

Cannot be modified by the previous learning experiences.

Action of Nerves

The nerve response affects only particular glands.

The effect of nervous response is always short-lived.

Can be modified by the previous learning experiences.

Solution E.1.

a. Glucagon: Alpha cells of the islets of Langerhans

Insulin: Beta cells of the islets of Langerhans

b. Insulin: It maintains the levels of glucose (sugar) in the blood.

<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>

Glucagon: It raises the blood glucose levels by stimulating the breakdown of glycogen to glucose in the liver.

c. An endocrine gland is one which does not pour its secretions into a duct, while an exocrine gland is a gland which pours its secretions into a duct. Because the pancreas produces hormones such as insulin, glucagon and somatostatin directly into the blood and not into a duct, it functions as an endocrine gland. Because it secretes the pancreatic juices for digestion via a duct, it functions as an exocrine gland. Hence, the pancreas is an exo-endocrine gland.

d. Insulin is not administered orally because the digestive juices degrade insulin, and thus the insulin is ineffective in the body.

e. Islets of Langerhans

f. The pancreas is located in the abdomen behind the stomach.

Solution E.2.

(a) This portion is located in the neck region above the sternum.

(b) 1- Larynx, 2 – Thyroid gland, 3 – Trachea

(c) Larynx is the voice box containing vocal cords. It helps in producing sound.

Thyroid gland produces thyroxine and calcitonin which are essential hormones.

Trachea is the wind pipe that helps in passing air to and from the respiratory system while breathing.

(d) Structure 2 is the thyroid gland. It is an endocrine gland, so it is ductless and pours its secretions directly into the blood. Hence, there is no duct.

Solution E.3.

(a) 1- Pituitary gland, 2 – thyroid gland, 3 – pancreas, 4 – adrenal glands

(b) All the glands shown in the above diagram are endocrine glands. They secrete essential hormones and pour their secretions directly into the blood.

(c) Iodine is essential for the normal working of thyroxine.

Solution E.4.

<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>

(a) A

(b) Hormone secreted by the endocrine gland is shown in the image A to be moving only in one direction i.e. towards the target organ. But actually the hormones poured into the blood stream may have one or more target sites at a time. The arrows shown are carried to all parts by the blood and their effect is produced only in one or more specific parts.



<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>

Selina Publishers ICSE Solutions

Class 10 Biology

- Chapter 1 - Cell Cycle, Cell Division and Structure of Chromosomes
- Chapter 2- Genetics Some Basic Fundamentals
- Chapter 3- Absorption by Roots : The Processes Involved
- Chapter 4- Transpiration
- Chapter 5- Photosynthesis: Provider of Food for All
- Chapter 6- The Circulatory System
- Chapter 7- The Excretory System (Elimination of Body Wastes)
- Chapter 8- The Nervous System
- Chapter 9- Endocrine Glands
- Chapter 10- The Reproductive System
- Chapter 11- Population- The Increasing Numbers and Rising Problems
- Chapter 12- Aids To Health
- Chapter 13- Health Organisations
- Chapter 14- Pollution- A Rising Environmental Problems

<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>

About About Selina Publishers ICSE

Selina Publishers has been serving the students since 1976 and is one of the quality ICSE school textbooks publication houses. Mathematics and Science books for classes 6-10 form the core of our business, apart from certain English and Hindi literature as well as a few primary books. All these books are based upon the syllabus published by the Council for the I.C.S.E. Examinations, New Delhi. The textbooks are composed by a panel of subject experts and vetted by teachers practising in ICSE schools all over the country. Continuous efforts are made in complying with the standards and ensuring lucidity and clarity in content, which makes them stand tall in the industry.

<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>

About IndCareer

IndCareer.com is a leading developer of online career guidance resources for the Indian marketplace. Established in 2007, IndCareer.com is currently used by over thousands of institutions across India, including schools, employment agencies, libraries, colleges and universities.

IndCareer.com is designed to assist you in making the right career decision - a decision that meets your unique interests and personality.

For any clarifications or questions you can write to **info@indcareer.com**

Postal Address

IndCareer.com
52, Shilpa Nagar,
Somalwada
Nagpur - 440015
Maharashtra, India

WhatsApp: +91 9561 204 888

Website: <https://www.indcareer.com>

<https://www.indcareer.com/schools/selina-class-10-icse-solutions-biology-chapter-9-endocrine-glands/>