

Topic :- Chemical Coordination & Integration

- 1 **(d)**
Goitre can occur due to iodine deficiency, pituitary adenoma and Grave's disease (toxic goitre due to hyperthyroidism) but it is not the consequence of excessive intake of exogenous thyroxine.
- 2 **(b)**
ADH (Antidiuretic hormone) shows polyuria (excessive urine volume). The deficiency of ADH causes excessive secretion of urine due to lack of reabsorption at distal convoluted tubule and collecting duct.
- 3 **(b)**
Insulin secreted from β -cell of islets of Langerhans (endocrine part of pancreas) affects liver, muscle and adipose tissue. In the muscular tissue, it acts to promote carbohydrate metabolism and storage of glycogen. In liver cells, it favours glycogenesis, glycolysis and increases lipogenesis. In adipose tissue, it enhances the membrane transfer of glucose and promotes lipogenesis.
- 4 **(d)**
A-Pituitary; B-2
- 5 **(a)**
The hypothalamus regulates the function of the anterior pituitary by means of the hormones it secretes into the portal vessels of the hypothalamo- hypophyseal system. Blood flows from the hypothalamus to the anterior pituitary gland. The quantities of hormones secreted are very small and cannot be detected in the general circulation.
- 6 **(c)**
I, II, III, IV, V, VI, VII and VIII
- 7 **(c)**
Induced or artificial methods of breeding are used to obtain desirable eggs. In this ova from the desired female and sperms from desired male are obtained by artificial mechanical process and the ova are get fertilized by the sperms and then fertilized eggs are collected. FSH and LH present in pituitary extract helps in induced breeding.
- 8 **(b)**
Grave's disease is caused by excess secretion of thyroid hormone.
ADH increases the reabsorption of water in the distal convoluted tubule, collecting ducts of the nephrons of the kidneys.

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(d)

Hormone	Secreted from	Chemical nature
Oxytocin	Posterior pituitary	Peptide
Vasopressin	Posterior pituitary	Peptide
Thyroxine	Thyroid	Derivative of amino acids
Insulin	Pancreas	Polypeptide

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(a)

Pineal gland helps in maintaining the normal rhythm of sleep-wake cycle, body temperature, in addition melatonin also influences metabolism, pigmentation, the menstrual cycle as well as our defence capability

11

(b)

Acromegaly is caused by the hypersecretion of growth hormone from pituitary gland in adults. It is characterized by disproportionate increase in size of bones of face, hands and feet. Some important disorders related to thyroid glands are Grave's disease, cretinism, myxoedema or Gull's disease, goitre, Hashimoto's disease, etc.

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(b)

All steroid hormones are made up of cholesterol which is a lipid derivative, synthesized in the liver cells. These hormones are lipid soluble. The effect of these hormone is slow but it lasts longer, e.g., corticotrophin aldosterone, testosterone, oestrogen, progesterone, etc.

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(b)

As the basic function of vasopressin (a hormone secreted from neurohypophysis) is to conserve body's water. Its failure or hyposecretion leads to a reduction in renal absorption of water and a consequent elimination of a large volume of dilute (hypotonic) urine, *i.e.*, diabetes insipidus.

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(c)

Volume of urine is regulated by aldosterone and ADH. ADH is related with concentration of urine.

15

(b)

The source of somatostatin is same as that of insulin and glucagon because all are secreted from pancreas. Alpha cells secrete glucagon hormone beta cell secrete insulin hormone and delta cells secrete small amount of gastrin and somatostatin. Somatostatin also secreted by hypothalamus and some cells of digestive tract. The major action of pancreatic somatostatin is to inhibit the secretion of both insulin and glucagon.

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(a)

Growth hormone is released by anterior lobe of pituitary. It increases the body growth by

- stimulating cell division, protein synthesis, growth of muscle and bones
- 17 **(d)**
If fertilization occurs and the foetus is implanted in the endometrium, the trophoblast cells of the developing placenta secrete a hormone (hCG). This hormone, like LH maintains the corpus luteum and secretion of progesterone and oestradiol by it. These two hormones check the breakdown of the endometrium of the uterus. The absence of menstrual bleeding is the earliest sign of pregnancy.
- 18 **(d)**
Myxoedema is caused due to under secretion of thyroid hormone. This disorder appears in adults. It is also known as Gull's disease. It is characterized by puffy appearance due to subcutaneous accumulation of fat, low BMR, heart rate etc.
- 20 **(d)**
Hormones are specifically acting as organic compounds, secreted by endocrine glands directly into the blood stream from where these are transported to the target organ. These can induce or inhibit various biochemical processes and are not available again after the process is over. There are four main classes of hormones, *i. e.*, protein and polypeptide hormones, steroid hormones, monoamines and lipid based hormones.

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	D	B	B	D	A	C	C	B	D	A
Q.	11	12	13	14	15	16	17	18	19	20
A.	B	B	B	C	B	A	D	D	D	D