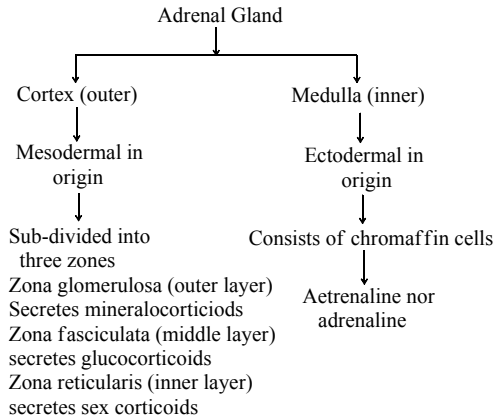


Topic :-Chemical Coordination & Integration

- 1 (c)
Glucagon is a hormone, secreted by α -cells of islets of Langerhans in the pancreas. It increases the concentration of glucose in the blood by stimulating the metabolic breakdown of glycogen. It thus, antagonizes the effects of insulin.
- 2 (b)
Adrenaline causes contraction of cardiac muscles, intensify increasing both rate and force of heart beat, pulse rate, arterial pressure and cardiac output.
- 3 (d)
Pineal gland secretes two hormones – melatonin and serotonin. Melatonin concentration in the blood appears to flow a diurnal cycle.
- 4 (d)
About 99% part of pancreas is exocrine and formed of hollow pancreatic acini or lobules embedded in a connection tissue stroma. In the stroma, there are numerous, small clusters of endocrine cells, called islets of Langerhans.
- 5 (d)
Noradrenaline and adrenaline commonly called as catecholamines controls the mentioned activities
Adrenaline and noradrenaline effects are
(i) blood pressure
(ii) basal metabolic rate
(iii) respiration rate
(iv) sugar level
(v) lipolysis (breakdown of lipids)
- 6 (b)
Chromaffin cells.
A-Cortex, B-Medulla, C-Zona glomerulosas, D-Zona fusiculata, E-Zona reticulate.
Hormones secreted by cortex region of adrenal gland are commonly called corticoids



7

(c)

Hypothyroidism during pregnancy causes defective development and maturation of the growing baby leading to stunted growth (cretinism), mental retardation, low intelligence quotient, abnormal skin, deaf-mutism, etc. In adult women, hypothyroidism may cause menstrual cycle to become irregular

8

(c)

Parathyroid hormone or **parathormone** is the single most important hormone controlling the calcium balance of the blood. Because plasma calcium ion homeostasis is essential for so many functions, including transmission of nerve impulses, muscle contraction and blood clotting, precise control of Ca^{2+} levels is critical.

9

(d)

Most of the trophic (*Trophe* = nourishment) hormones are secreted by anterior lobe of pituitary.

Gonadotrophins or gonadotrophic hormones are those which stimulates the gonads (testes and ovaries), *e.g.*, FSH and LH. Follicle stimulating hormone (FSH) stimulates growth of ovarian follicles and the secretion of oestrogen in the female and spermatogenesis (formation of sperms) in the male. Luteinizing hormone (LH) stimulates corpus luteum of the ovary to secrete progesterone in the females. In male, it activates the Leydig's (interstitial) cells of testis to secrete androgens.

10

(a)

Pituitary gland is smallest endocrine gland. It is called master gland because. Its control all the other gland of body

11

(d)

Sella turcica protects pituitary gland. Pituitary lies in the sella turcica of the sphenoid bone and is attached to the hypothalamus by a short infundibular stalk.

12

(d)

Vitamin-D and parathormone are responsible for regulation of calcium and phosphate level in body. Way they are similar

13

(d)

Growth hormone secreted by anterior lobe of pituitary gland, promotes cell division, protein synthesis and bone growth.

14

(b)

Parathyroid Hormone (PTH) increases the Ca^{2+} in the blood. PTH acts on bones and stimulates the process of bone resorption (dissolution/demineralisation). PTH also stimulates the reabsorption of Ca^{2+} by the renal tubules and increases Ca^{2+} absorption from the digested food. It is thus clear that PTH is hypercalcemic hormone, *i.e.*, it increases the blood Ca^{2+} level. Along with TCT, it plays a significant role in calcium balance in the body

15 **(d)**
Cyclic AMP, IP_3 , Ca^{2+} , are all secondary messenger

16 **(a)**
Intracellular receptors.

Steroid hormones are the lipid soluble hormones. They are also categorized as hydrophobic hormones. They directly pass through the cell membrane and interact with intracellular receptors present inside the cell (generally into the nucleus). Generally the steroid hormone is derived from the cholesterol ring

17 **(c)**
Adrenaline is increased in blood during fear situation.

18 **(d)**
Pineal gland secretes melatonin hormone. The concentration of this hormone in blood appears to flow a diurnal (day-night) cycle as it arises in the evening and through the night, it regulates working of gonads (testes and ovaries).

19 **(c)**
Pancreas is a heterocrine gland \square . \square ., partly endocrine and partly exocrine. The exocrine part secretes pancreatic juice. The endocrine part is formed of islets of Langerhans. Islets of Langerhans are composed of three types of cells—
Alpha cells: secrete glucagon hormone.
Beta cells: secrete insulin hormone.
Gamma cells: precursors of alpha and beta cells.

20 **(a)**

Gland	Hormone	Function
Adenohypophysis	Prolactin	Milk production in acini of gland.
Neurohypophysis	Oxytocin	Contraction of uterine muscles.
Adrenal medulla	Adrenaline	Meets the emergency during shock and fear.
Adrenal cortex	Aldosterone	Maintain and

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

PE