

Class: 11

Subject: biology

Topic: Chemical Integration and Coordination

No. of Questions: 20

Duration: 60 Min

Maximum Marks: 60

1. Which of the following is not an endocrine gland?

- A. Pancreas
- B. Liver
- C. Thymus
- D. Adrenals

Detailed Answer:

Liver is the largest gland of vertebrate body, with a wide range of functions, several of which are vital for life to continue. Pancreas, thymus and adrenals are endocrine glands.

Answer: B

2. The abbreviation TSH stands for

- A. thymine stimulating hormone
- B. thyroxine stimulating hormone
- C. thyroid stimulating hormone
- D. None of the above

Detailed Answer:

TSH stands for thyroid stimulating hormone.

Answer: C

3. Increase in bleeding time and delay in blood coagulation is due to the deficiency of which hormone?

- A. Adrenaline
- B. Noradrenaline
- C. Parathormone
- D. Thyroxine

Detailed Answer:

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.

Answer: C

4. Diabetes mellitus takes place only when
- a - cells of pancreas are in excess
 - b - cells of pancreas are in excess
 - a - cells of pancreas are in hypo
 - b - cells of pancreas are in hypo

Detailed Answer:

Diabetes mellitus is a common endocrine disorder caused by hyposecretion of insulin hormone. Insulin hormone is secreted by the b -cells of the pancreas. The insulin controls the glucose level in blood.

Answer: D

5. Which one of the following is not a second messenger in hormone action?
- cGMP
 - Calcium
 - Sodium
 - cAMP

Detailed Answer:

Second messengers are the organic molecules and sometimes the metal ions, acting as intracellular signals, whose production or release usually amplifies a signal such as a hormone, received at the cell surface.

Sodium (Na) is not a second messenger in hormone action.

Answer: C

6. A hormone, secreted by the endocrinal cells of duodenal mucosa which influences the release of pancreatic juice, is
- relaxin
 - cholecystokinin
 - secretin
 - progesterone

Detailed Answer:

Cholecystokinin-Pancreozymin (CCK-PZ) is the hormone secreted from mucosa of small intestine. It stimulates pancreas to release enzymatic (pancreatic) juice and gall bladder to eject bile.

Answer: B

7. Decrease in the calcium level in blood is caused by
- prolactin
 - calcitonin
 - adrenocorticotrophin
 - oxytocin

Detailed Answer:

Calcitonin secreted by thyroid gland, lowers the concentration of calcium (and phosphate) in the body by suppressing the release of calcium from bone and promoting excretion of calcium and phosphate by the kidneys.

Answer: B

8. Chemicals, which are synthesized by one organism and affect the behaviour of another member of the same species, are called
- enzymes
 - hormones
 - flavoids
 - pheromones

Detailed Answer:

Pheromones are chemicals used for communication amongst individuals of the same species. It influences the behavioural and physiological action of other member of the same species.

Answer: D

9. Match column I with column II and select the correct option.

Column I	Column II
A. Adrenaline	1. Myxoedema
B. Hyperparathyroidism	2. Accelerates heart beat
C. Oxytocin	3. Salt-water balance
D. Hypothyroidism	4. Childbirth
E. Aldosterone	5. Demineralization

- A.
- | A | B | C | D | E |
|---|---|---|---|---|
| 2 | 5 | 4 | 1 | 3 |
- B.
- | A | B | C | D | E |
|---|---|---|---|---|
| 3 | 4 | 5 | 3 | 2 |
- C.
- | A | B | C | D | E |
|---|---|---|---|---|
| 5 | 3 | 2 | 4 | 1 |
- D.
- | A | B | C | D | E |
|---|---|---|---|---|
| 2 | 3 | 4 | 5 | 1 |

Detailed Answer:

Column I	Column II
Adrenaline	Accelerates heart beat
Hyperparathyroidism	Demineralization
Oxytocin	Childbirth
Hypothyroidism	Myxoedema
Aldosterone	Salt-water balance

Answer: A

10. Gland responsible for calcium metabolism is

- A. thymus
- B. thyroid
- C. parathyroid
- D. adrenal

Detailed Answer:

Epithelial cells of parathyroid gland secrete parathormone. This hormone helps to regulate the metabolism of calcium and phosphate. Parathyroids are under the feedback control of blood calcium level.

Answer: C

11. Disorder related with thyroid gland is

- A. diabetes mellitus
- B. hypercalcemia
- C. osteoporosis
- D. myxoedema

Detailed Answer:

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 puffs' appearance due to subcutaneous accumulation of fat, low BMR, heart rate etc

Answer: D

12. The condition in which the potassium levels are increased is known as

- A. hypercholesterolemia
- B. hyperkalemia
- C. osteomalacia
- D. hyperexcitability

Detailed Answer:

An abnormal increase in the blood concentration of K^+ is called hyperkalemia.

Answer: B

13. A steroid hormone which regulates glucose metabolism is

- A. cortisol
- B. corticosterone
- C. 11 -deoxycorticosterone
- D. cortisone

Detailed Answer:

Cortisol or hydrocortisone is the principal glucocorticoid hormone of many mammals including humans. It is secreted from zona fasciculata layer of adrenal cortex. It regulates the glucose metabolism and promotes gluconeogenesis, especially during starvation and raises blood pressure.

Answer: A

14. Which one of the following pairs is incorrectly matched?

- A. Glucagon - Beta cells (source)
- B. Somatostatin - Delta cells (source)
- C. Corpus luteum - Relaxin (secretion)
- D. Insulin - Diabetes mellitus (disease)

Detailed Answer:

In pancreatic islets, alpha or α -cells constitute about 15% of pancreatic islets cells and secrete glucagon. Glucagon intensifies glycogenolysis, deamination and gluconeogenesis, and inhibits glycogenesis in liver cells. It also intensifies lipolysis in adipose tissue. Thus, it is a promoter of catabolic metabolism.

Answer: A

15. Which of the following is an accumulation and release centre of neurohormones?

- A. Posterior pituitary lobe
- B. Intermediate lobe of the pituitary
- C. Hypothalamus
- D. Anterior pituitary lobe

Detailed Answer:

Almost all secretion by the pituitary gland are controlled by hormonal signal from hypothalamus. The neurohormones are secreted and accumulated by hypothalamus.

Answer: C

16. During emergency which of the following hormones is secreted?

- A. Aldosterone
- B. Thyroxine
- C. Adrenaline
- D. Calcitonin

Detailed Answer:

Adrenaline is also called 'emergency hormone' because it contributes the fright, fight or flight reactions which occur in condition of emergency.

Answer: C

17. Inhibition of secretion of which of the following hormones is necessary for disintegration of corpus luteum?

- A. LH
- B. Progesterone
- C. LTH
- D. FSH

Detailed Answer:

Progesterone secreted from corpus luteum, prepares uterine endometrium for receiving blastocysts for implantation. Progesterone is also called **pregnancy hormone** and anti-FSH and anti-LH. It maintains pregnancy and prevents formation of new follicles and ovulation during gestation period. If pregnancy has not occurred, corpus luteum degenerates and next menstrual cycle is repeated.

Answer: B

18. Feeling the tremors of an earthquake, a scared resident of seventh floor of a multistoreyed building starts climbing down the stairs rapidly. Which hormone initiates this action?

- A. Thyroxine
- B. Adrenaline
- C. Glucagon
- D. Gastrin

Detailed Answer:

Adrenaline hormone is responsible for this action, as adrenaline hormone is known as 3F hormone.

Answer: B

19. Which hormone/gland acts in biological clocks?

- A. Thyroid
- B. Thymus
- C. Adrenal
- D. Pineal

Detailed Answer:

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).

Answer: D

20. Match the hormones with its source of secretion.

Column I	Column II
A. Somatostatin	1. Pineal gland
B. Melatonin	2. Corpus luteum
C. Aldosterone	3. Placenta
D. Progesterone	4. Adrenal cortex
E. HCG	5. Islet of Langerhans
	6. Adenohypophysis

A.

A	B	C	D	E
5	1	6	2	3

B.

A	B	C	D	E
1	2	4	3	5

C.

A	B	C	D	E
2	6	4	5	3

D.

A	B	C	D	E
5	1	4	2	3

Detailed Answer:

The correct matching is

Column I	Column II
Somatostatin	Islet of Langerhans
Melatonin	Pineal gland
Aldosterone	Adrenal cortex
Progesterone	Corpus luteum
hCG	Placenta

Answer: D