

India's Number 1 Education App

BIOLOGY

BOOKS - PEARSON IIT JEE FOUNDATION

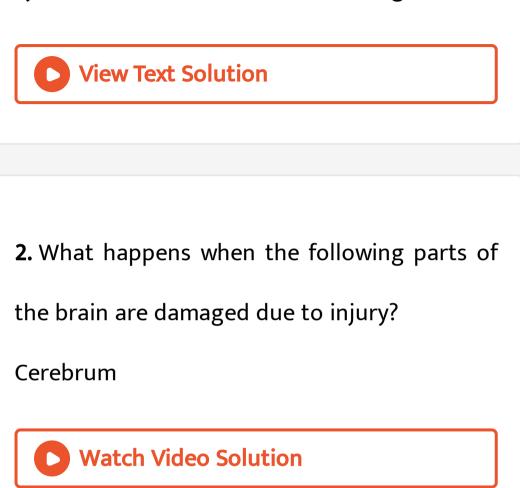
CONTROL AND COORDINATION

Quick Recap

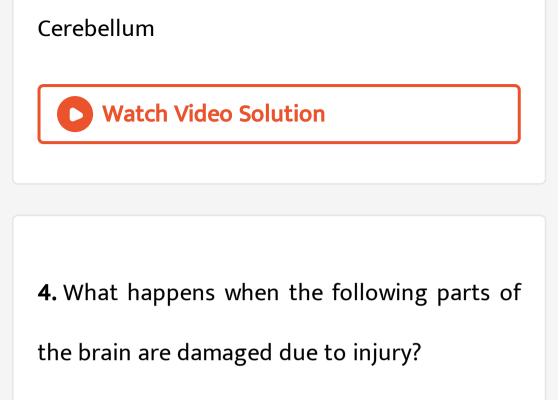
1. With the help of an example, explain that

the various systems of a body work in a

synchronized manner in human beings.



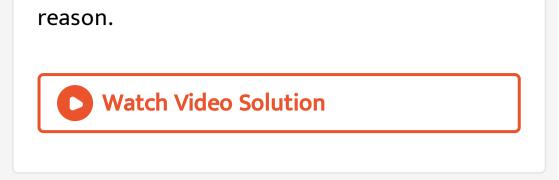
3. What happens when the following parts of the brain are damaged due to injury?



Medulla oblongata

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5. Steroid hormones are slow in action while protein hormones are faster in action. Give



6. Nervous system and endocrine system work in coordination with each other. What is the significant difference between the two systems?



7. Which hormone is in greater concentration

in fruits and seeds? Why?

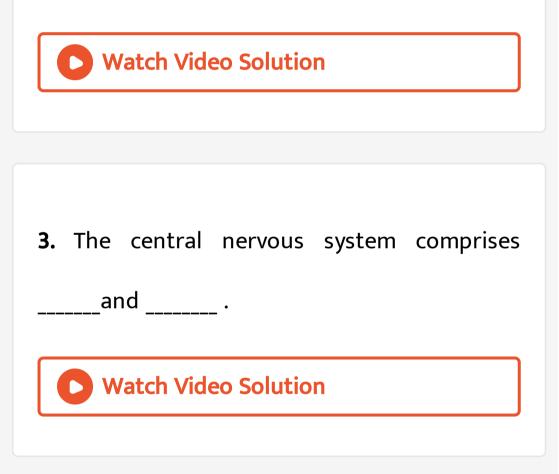


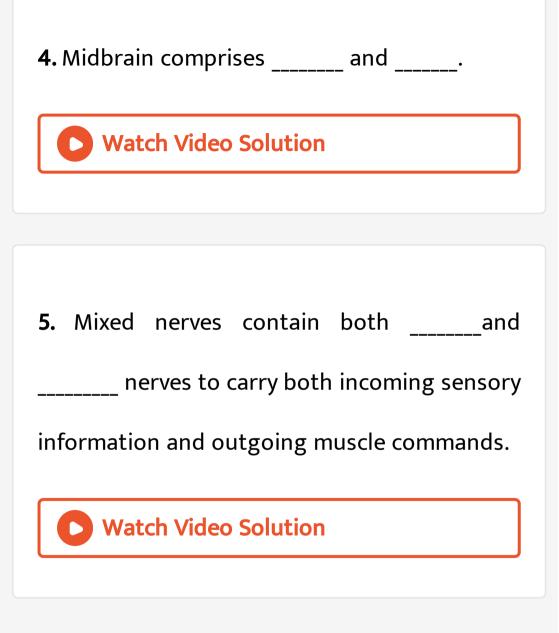
Test Your Concepts

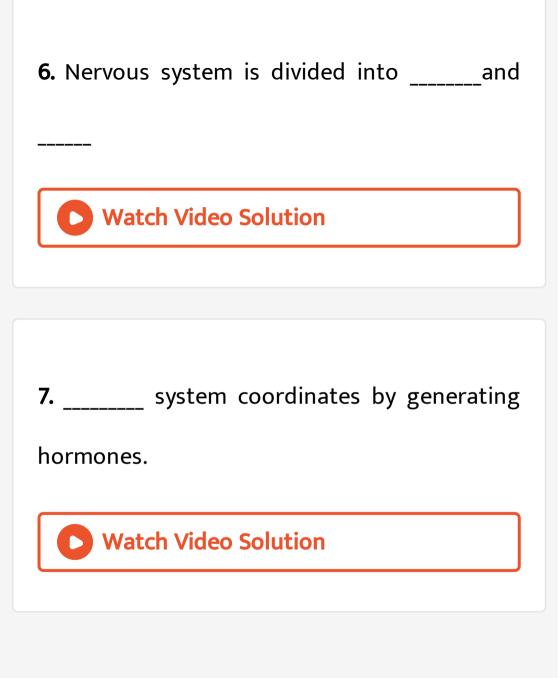
1. _____ is the part of the neuron that comprises a centrally located nucleus surrounded by cytoplasm.

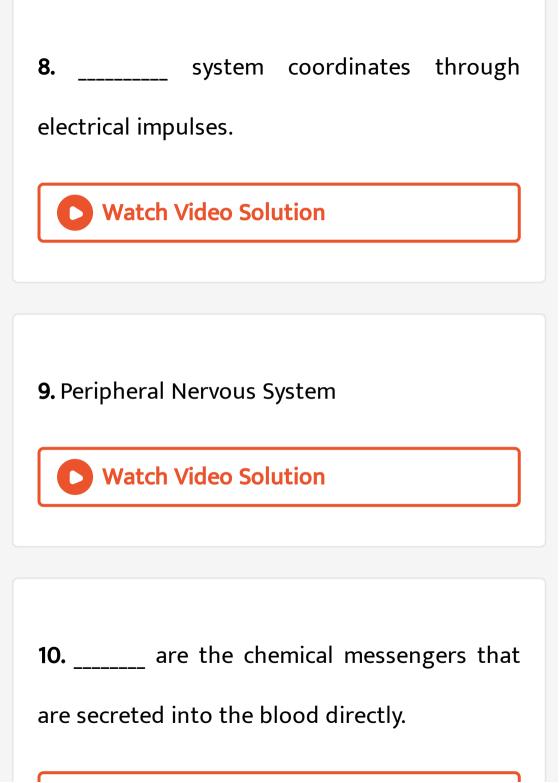
2. The long slender projection of a neuron is

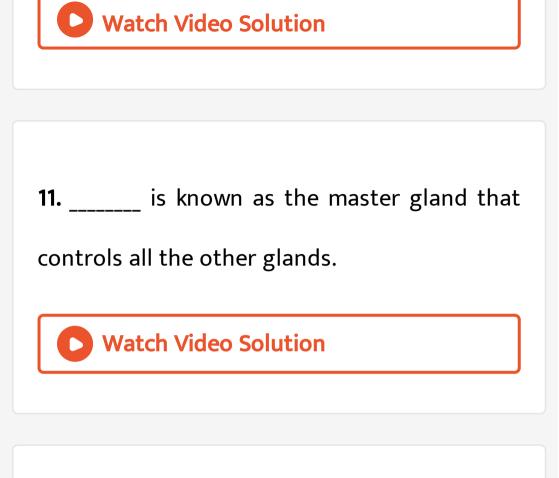
known as _____









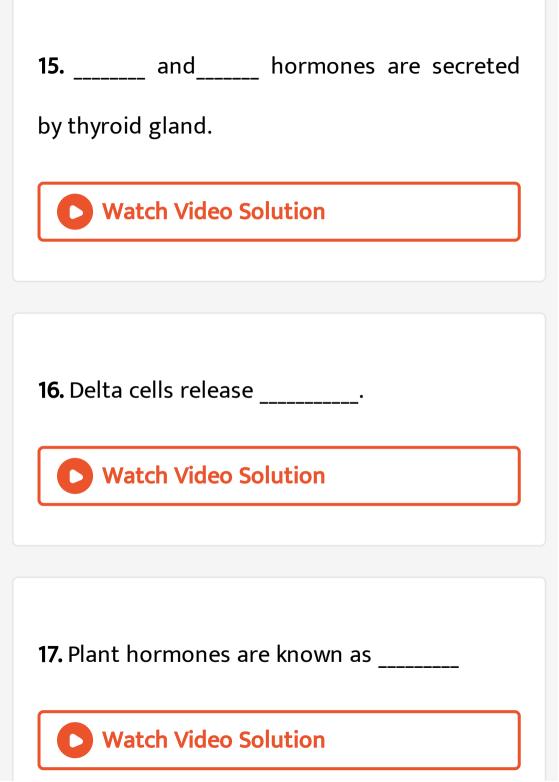


12. Adrenocorticotropic hormone stimulates adrenal cortex to secrete _____ and _____hormones.

13. ______ and _____are the hormones released at the time of stress by glucocorticoids.

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14. Glucagon hormone is released by _____



18. _____ is the hormone that helps in cell division in plants.



19. The process of growth of the plant in response to light is known as _____.



20. Which category of neurons convert the external stimuli to internal impulses?

A. Afferent neurons

B. Efferent neurons

C. Connector neurons

D. Both (b) and (c)

Answer: A

21. Which nerves transmit the electrical impulses from the central nervous system to the muscles and glands?

A. Sensory neurons

B. Motor neurons

C. Mixed neurons

D. Peripheral neurons

Answer: B

22. Identify the nerves that receive the stimulus from the sense organs and transmit the impulse to the central nervous system.

A. Sensory nerves

B. Motor nerves

C. Mixed nerves

D. Both (a) and (b)

Answer: A

23. Identify the part of the brain that distinguishes human from animals in terms of functioning,

A. Middle arachnoid

B. Forebrain

C. Mid brain

D. Hindbrain

Answer: B

24. Identify the parts of the forebrain among

the following

A. Cerebrum

B. Diencephalon

C. Corpus collasum

D. Both (a) and (b)

Answer: D

25. Outer layer of the cerebrum is known as

A. grey matter

B. corpus collasum

C. cerebral cortex

D. white matter

Answer: C

26. Identify the lobe of the cerebrum that is mainly responsible for receiving the information from retinas in the eyes and processing the visual information.

A. Occipital lobe

B. Frontal lobe

C. Parietal lobe

D. Temporal lobe

Answer: A





27. How many pairs of spinal nerves are there

in human body?

A. 12

- B. 32
- C. 35
- D. 31

Answer: D



28. Which gland is situated in a bony structure in the middle of the base of the skull?

A. Pituitary

B. Adrenal

C. Thyroid

D. Thymus

Answer: A

29. Identify the hormone secreted by the pituitary gland that controls the cell metabolism?

A. Follicle stimulating

B. Somatotropic

C. Vasopressin

D. Oxytocin

Answer: B

30. Which lobe of the pituitary gland secretes

melanocyte stimulating hormone?

A. Anterior lobe

B. Intermediate lobe

C. Posterior lobe

D. Both (a) and (b)

Answer: B

31. Identify the hormone that is/are not secreted by the posterior lobe of the pituitary gland.

A. Prolactin

B. Thyroid stimulating

C. Oxytocin

D. Both (a) and (b)

Answer: D

32. Identify the hormone that stimulates the formation of corpus luteum.

A. Thyroid stimulating hormone

B. Follicle stimulating hormone

C. Luteinizing hormone

D. Prolactin hormone

Answer: C

33. Which among the following phytohormone

is involved in the growth of the plants?

A. Auxins

B. Gibberellins

C. Abscisic acid

D. Both (a) and (b)

Answer: D

34. Which phytohormone inhibits the growth

of the plant?

A. Auxins

B. Cytokinins

C. Abscisic acid

D. Gibberellins

Answer: C

35. The growth of the pollen tube towards the

ovules is known as

A. phototropism

B. chemotropism

C. geotropism

D. hydrotropism

Answer: B

36. Match the entries of Column 1 with those

of Column 2.

Column 1	Column 2
A. Synapse	(i) Cyton
B. Neuron	(ii) Cerebral peduncles
C. Hindbrain	(iii) Synaptic cleft
D. Mid brain	(iv) Pons

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37. Match the entries of Column 1 with those of Column 2.

Column 1	Column 2
A. Glucocorticoids	(i) Somatotropic hormone
B. Calcitonin	(ii) Adrenal medulla
C. Adrenaline	(iii) Thyroid gland
D. Dwarfism	(iv) Adrenal cortex

Α.

A
ightarrow (iv), B
ightarrow (iii), C
ightarrow (ii), D
ightarrow (i)

Β.

A
ightarrow (iii), B
ightarrow (i), C
ightarrow (iv), D
ightarrow (ii)C.

A
ightarrow (iii), B
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ightarrow (iv), D
ightarrow (i)

A ightarrow (i), B ightarrow (ii), C ightarrow (iii), D ightarrow (iv)

Answer:

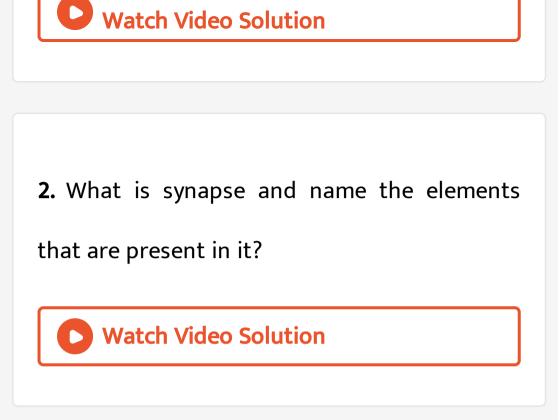


Mastering The Concepts Knowledge And Understanding

1. How are neurons classified based on their

function?

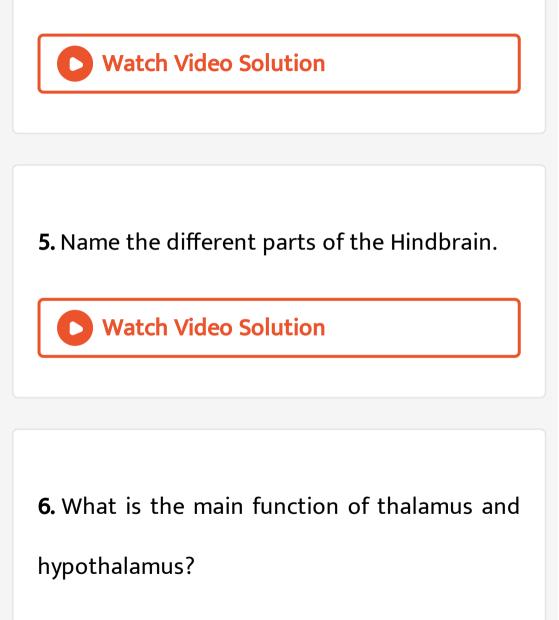




3. Name the different parts of the Forebrain .



4. Name the different parts of the Mid brain.



7. Write in brief about olfactory lobes

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8. What are the different regions present in a

neuron?



9. Explain about the transmission of electrical

signals in our body.

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10. Explain the type of action involved in the contraction of pupil when the eyes are exposed to the bright light.

11. What is meant by reflex action? Explain the formation of reflex arc by means of schematic diagram.



12. Differentiate among conditioned reflexes

and unconditioned reflexes.



13. What kinds of movements does a germinating seed exhibit?
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14. Identify the type of neurons associated with the Perception of fragrance of flowers .

15. Identify the type of neurons associated with the Instruction to climb up a staircase .

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16. Identify the type of neurons associated with the Picking up a stone to throw away a dog.

17. Which part of the brain keeps working even

when we are sleeping? Explain.

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18. Name the different endocrine glands in the

human body.



19. Define the hormones



20. What do you mean by the endocrine system?

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21. What is the main function of the pituitary

gland?

22. Write about the structure and position of

the thyroid gland.



23. Explain about the following disease.

Exophthalmic goitre

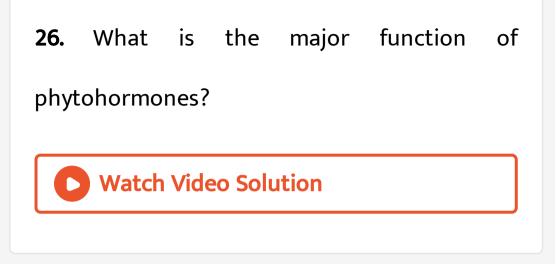
24. Explain about the following disease.

Cretinism in children

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25. Explain about the following disease.

Goitre

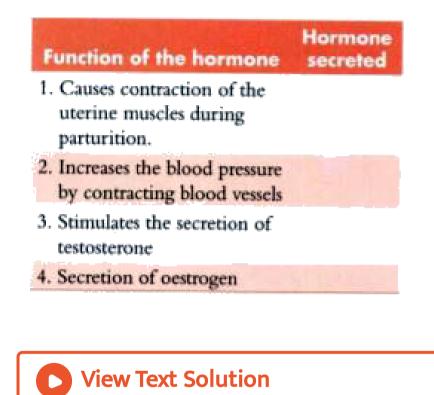


27. What is the position of the master gland in

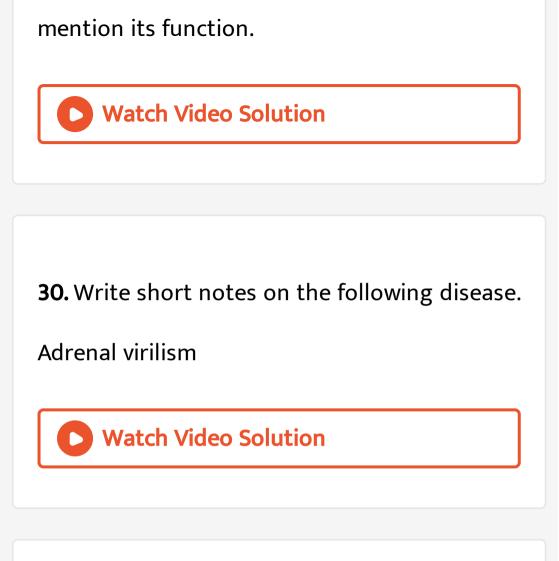
human body? Explain its structure.



28. Complete the table



29. Identify the gland that appears like a butterfly located at the base of the neck and



31. Write short notes on the following disease.

Conn's syndrome



32. Write short notes on the following disease.

Cushing's syndrome

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33. How does secretion of insulin vary

according to the sugar level in blood?

34. Why are hormones referred to as chemical

messengers?

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35. Conduction of electrical impulse is faster in myelinated neuron than in non-myelinated neuron. Give reason.

36. Nerve impulses in axon are unidirectional.

Give reason.

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37. State the difference between action

potential and resting potential.

38. Food tastes odd when we are suffering

from cold. Give reason.

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39. Head injury leading to vomiting and loss of

consciousness is considered fatal. Give reason.

40. Damage on the right side of the brain leads to paralysis of the left part of the body. Give reason.



41. A drunken driver does not have complete

control over the vehicle. Give reason.



42. Hypothalamus helps maintain body

temperature. Give reason.

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43. What is Parkinson's disease? How does it

occur?



44. How does autonomic nervous system control blood pressure?

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45. When we perceive the aroma of a delicious

food, our mouth becomes watery. Explain.

46. Availability of iodized salt in the market virtually eliminated the disease, goitre. Give reason.



47. How does stress cause diabetes or hyperglycemia?

48. What is an autoimmune disease? Glucocorticoids are prescribed for treating autoimmune diseases. Give reason.



49. LH and FSH are called gonadotrophins. Why?

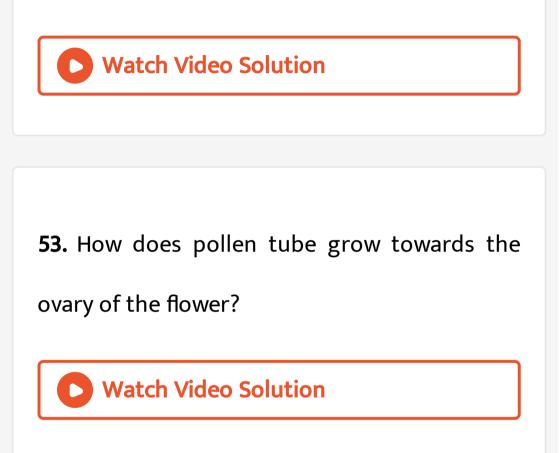
50. What do you mean by negative feedback system? Illustrate the negative feedback mechanism for controlling body temperature.



51. How is sugar level in blood maintained by

pancreas? Explain.

52. How does geotropism take place?



Mastering The Concepts Assertions And Reasons

1. Assertion (A): Axon conducts the electrical impulses away from the cell body of the neuron.

Reason (R): The membrane of neuron provides the passage for the movement of ions.

A. Both A and R are true and R is the

correct explanation for A.

B. Both A and R are true, but R is not the

correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer:

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2. Assertion (A): Synapse facilitates the transmission of impulses from one neuron to another.

Reason (R): Synapse produces chemical messengers called neurotransmitter.

A. Both A and R are true and R is the

correct explanation for A.

B. Both A and R are true, but R is not the

correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer:

3. Assertion (A): Action potential is generated due to the exit of sodium ions from the neuron through the plasma membrane. Reason (R): Movement of sodium ions through the plasma membrane takes place under the influence of a stimulus.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true, but R is not the

correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer:



4. Assertion (A): White matter of brain and

spinal cord comprises axons.

Reason (R): Axon of a neuron is coated with myelin sheath.

A. Both A and R are true and R is the

correct explanation for A.

B. Both A and R are true, but R is not the

correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer:

5. Assertion (A): A person helps in response to the bite of an insect.

Reason (R): Conditioned reflexes are learned by an individual through interaction with the stimuli during the lifetime.

A. Both A and R are true and R is the

correct explanation for A.

B. Both A and R are true, but R is not the

correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer:

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6. Assertion (A): If the quantity of hormones secreted gets deviated from its normal range, our body gets affected severely.
Reason (R): The function of hormone is to stimulate or inhibit the targeted organ to act

so that homeostasis of our body can be maintained.

A. Both A and R are true and R is the

correct explanation for A.

B. Both A and R are true, but R is not the

correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer:



7. Assertion (A): The pituitary gland is the master gland of our body.

Reason (R): The pituitary gland controls the activity of other endocrine glands such as thyroid, adrenal, ovaries and testes.

A. Both A and R are true and R is the correct explanation for A.

B. Both A and R are true, but R is not the

correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer:



8. Assertion (A): Excessive thirst is a symptom

of diabetes.

Reason (R): Insulin controls the water content

of the body.

A. Both A and R are true and R is the

correct explanation for A.

B. Both A and R are true, but R is not the

correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer:

9. Assertion (A): Thyroid glands are called supra-renal gland.

Reason (R): T3 and T4 are secreted from thyroid that regulate metabolism in our body.

A. Both A and R are true and R is the

correct explanation for A.

B. Both A and R are true, but R is not the

correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer:



10. Assertion (A): Phototropism is the process of growth of the plant in response to light. Reason (R): Auxins are involved in growth.

A. Both A and R are true and R is the

correct explanation for A.

B. Both A and R are true, but R is not the

correct explanation for A.

C. A is true and R is false.

D. A is false and R is true.

Answer:

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Assessments Tests

1. Identify the disease caused due to hyposecretion of thyroxine hormone.

- A. Hyperthyroidism
- B. Exophthalmic goitre
- C. Myxoedema in adults
- D. Both (a) and (b)

Answer: C

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2. Name the disease caused by the hypersecretion of thyroxin hormone.

- A. Cretinism in children
- B. Hyperthyroidism
- C. Exophthalmic goitre
- D. Both (b) and (c)

Answer: D

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3. Write the missing correlated terms.

Diabetes mellitus : Hyposecretion of insulin ::

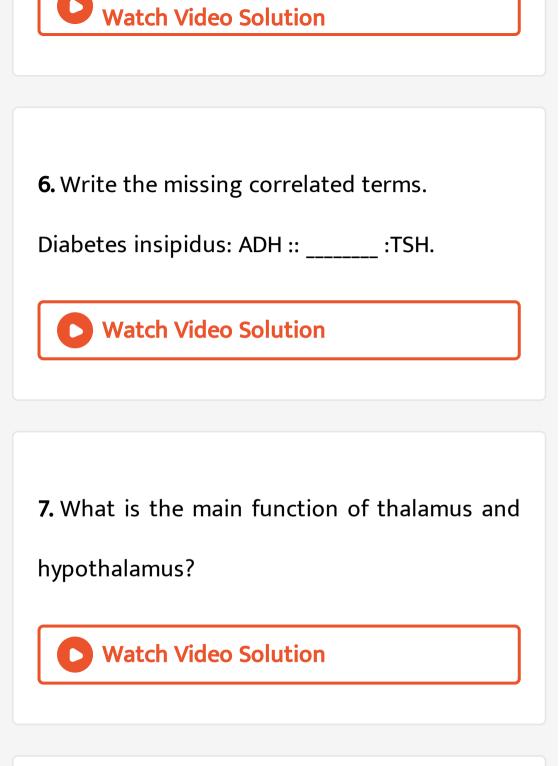
: hypersecretion of insulin.

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4. Write the missing correlated terms.
Mineralocorticoids : :: Glucocorticoids :
cortisol.
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5. Write the missing correlated terms.

Anterior lobe : FSH :: Intermediate lobe :





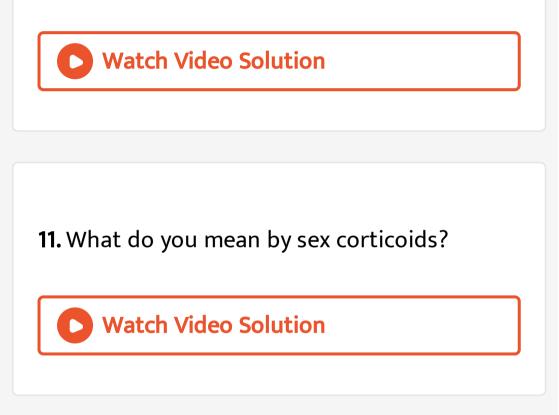
8. Identify and write the function of the different categories of the nervous system, in which the nerves connect the different organs, limbs and skin to the central nervous system.

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9. What are the main functions of the long cylindrical structure that has originated from the brain and runs through the vertebral column?

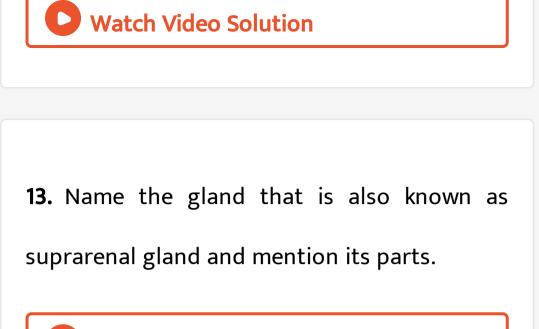


10. Explain the process of gluconeogenesis.



12. Explain about the disease that is caused by

the hyposecretion of the insulin hormone.



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14. Name the following.

The bony structure around the soft brain

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15. Name the following.

The bony structure that encloses the spinal

cord



16. Name the following.

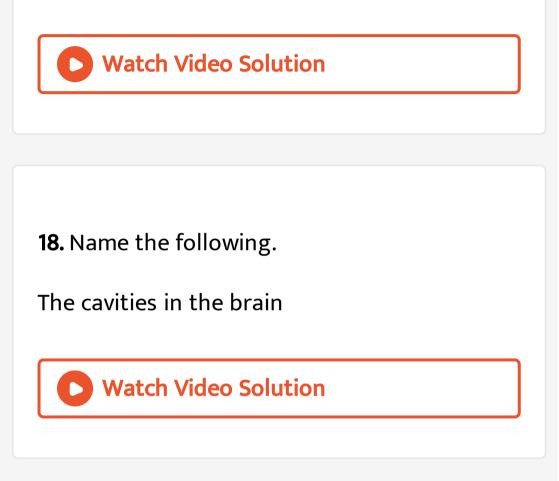
The protective membranes between the bony

structure and brain

> Watch Video Solution

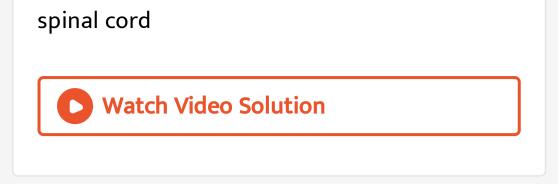
17. Name the following.

The long cavity of the spinal cord



19. Name the following.

The fluid that fills the cavities in the brain and



20. Identify the type of neurons associated with the following:

Perception of fragrance of flowers

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21. Identify the type of neurons associated with the following:

Instruction to climb up a staircase

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22. Identify the type of neurons associated with the following:

Picking up a stone to throw away a dog

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23. Identify the activities controlled by medulla

oblongata.

A. Functioning of kidneys

B. Walking on a rope

C. Release of hormones into blood

D. Becoming alert on hearing a sudden and

loud noise

Answer:

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24. A person who consumes more alcohol than

a specified quantity cannot walk properly or

cannot balance a bicycle. Give reason.



25. Running along a straight line is coordinated by cerebrum.



26. Reflex actions are controlled by brain.



27. The brain does not get easily damaged even when there is a minor mechanical injury to the head. Give reason.



28. Which part of the nervous system acts as a

connecting link between the central nervous

system and the various parts of the body?

