



INDIAN SCHOOL AL WADI AL KABIR

Class: X	DEPARTMENT : SCIENCE 2020 -2021 SUBJECT : BIOLOGY	Date of completion: 22.07.2020
Worksheet No: 03 With Answers	Chapter: CONTROL AND COORDINATION	Note: A4 FILE FORMAT
NAME OF THE STUDENT	CLASS & SEC:	ROLL NO.

OBJECTIVE TYPE QUESTIONS

MULTIPLE CHOICE QUESTIONS

- The second largest part of the brain is:
i) cerebrum ii) cerebellum iii) medulla iv) pons
- The male sex hormone is:
i) Testosterone ii) progesterone iii) oestrogen iv) oxytocin
- Stem of a plant show:
i) positive phototropism and positive hydrotropism
ii) negative geotropism and positive hydrotropism
iii) both positive phototropism and positive geotropism
iv) positive phototropism, negative geotropism and negative hydrotropism
- Simple goitre is caused due to:
i) Reduced intake of salt ii) lack of dietary iodine
iii) Reduced amount of growth hormone iv) Increased production of thyroxine
- Abnormal reduction in insulin production leads to:
i) Increase in level of calcium in blood ii) Decrease in the level of glucose in blood
iii) Decrease in the level of calcium in blood iv) Increase in the level of glucose in blood

ASSERTION-REASONING QUESTIONS

For the following questions, two statements are given-one labelled Assertion (A) and the other labelled Reason(R). Select the correct answer to these questions from the options (i) , (ii), (iii) and (iv) as given below:

- (i)Both A and R are true and R is the correct explanation of the Assertion.
- (ii)Both A and R are true but R is not the correct explanation of the Assertion.
- (iii)A is true but R is false.
- (iv)A is false but R is true.

1. Assertion : Auxin is a growth promoting phytohormone.
Reason : Auxin helps in cell elongation.
2. Assertion : Peripheral nervous system consists of only 31 pairs of spinal nerves.
Reason : Reflexes are controlled by spinal cord.
3. Assertion : Roots are positively hydrotropic.
Reason : Roots grow deep into the soil in search of water.
4. Assertion : Pancreas regulates the sugar level in blood.
Reason : Pancreas produces digestive juice containing enzymes.
5. Assertion : Mimosa plant is sensitive to touch.
Reason : Movement in mimosa is not thigmotropic.

ONE MARK QUESTIONS

- 1.Name the largest part of the brain.
- 2.What is a reflex?
- 3.State the importance of peripheral nervous system.
- 4.Give an example each for a growth promoting and growth inhibiting phytohormone

TWO MARK QUESTIONS

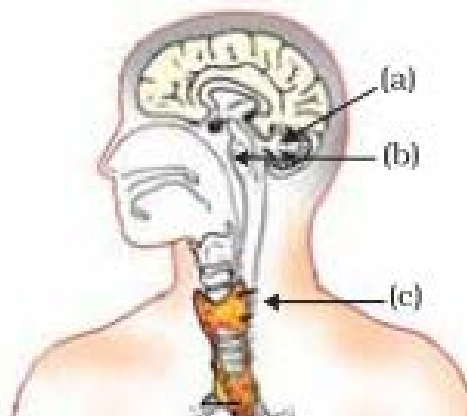
- 1.What are the differences between growth dependent and growth independent movements in plants?
- 2.Briefly explain the protection of the brain.
- 3.Name the emergency hormone.Why is it so called?
- 4.How does pancreas help in maintaining glucose level in blood?

THREE MARK QUESTIONS

- 1.Why does our body need a hormonal system when there is an effective nervous system?
- 2.State the significance of the sex glands as endocrine glands.
- 3.List any three characteristics of hormones in animals.
- 4.Explain feedback mechanism with the help of an example.

FIVE MARK QUESTIONS

1. Observe the given diagram and answer the questions that follow:



- i) Identify the parts of the brain labelled (a) and (b).
- ii) What is the significance of the endocrine gland labelled c?
- iii) How does lack of iodine affect the endocrine gland c?
- iv) Why are endocrine glands called ductless glands?

2.a) Complete the following table:

Receptor	location	stimulus
Gustatory	i).....	Taste
ii).....	ears	Sound
iii).....	iv).....	Light

b) Give reason for the following:

- i) Membrane surrounding the brain acts as a shock absorber.
- ii) Diabetic patients have higher level of glucose in blood.
- iii) Folding of leaves of mimosa plant when touched is a growth independent movement.

EXEMPLAR QUESTIONS

1. Why is the flow of signals in a synapse from axonal end of one neuron to dendritic end of another neuron but not the reverse?
2. Name the plant hormones responsible for the following:
 - (a) elongation of cells
 - (b) growth of stem
 - (c) promotion of cell division
 - (d) falling of senescent leaves
3. How are general growth and sexual maturation different from each other?
4. Why is pancreas called a dual gland? Give an example for another dual gland.

PREVIOUS YEAR BOARD QUESTIONS

- 1) List in tabular form two differences between reflex action and walking. (2)
- 2) Name the hormones secreted by the following endocrine glands and specify one function of each:
(a) Thyroid (b) Pituitary (c) Pancreas (3)
- 3) List in tabular form three distinguishing features between cerebrum and cerebellum (3)
- 4) (a) Why is the use of iodised salt advisable? Name the disease caused due to deficiency of iodine in our diet and state its one symptom.
(b) How do nerve impulses travel in the body? Explain. (5)
- 5) What is hydrotropism? Design an experiment to demonstrate this phenomenon. (5)
- 6) The following questions are based on the table and related information in the passage given below:
Thyroid Stimulating Hormone (TSH) stimulates thyroid gland to produce thyroxine.
Study the table given below.

Table :TSH levels during pregnancy

Stage of pregnancy	Normal (mU/L)	Low (mU/L)	High (mU/L)
First trimester	0.2 – 2.5	< 0.2	2.5 - 10
Second trimester	0.3 – 3.0	< 0.3	3.01 – 4.5
Third trimester	0.8 – 5.2	< 0.8	> 5.3

It is important to monitor TSH levels during pregnancy. High TSH levels and hypothyroidism can especially affect chances of miscarriage. Therefore, proper medication in consultation with a doctor is required to regulate /control the proper functioning of the thyroid gland.

- (i) Give the full form of TSH. (1)
- (ii) State the function of TSH. (1)
- (iii) Why do TSH levels in pregnant women need to be monitored? (1)
- (iv) A pregnant woman has TSH level of 8.95mU/L. What care is needed for her? (1)

X.....X

ANSWERS FOR THE WORKSHEET QUESTIONS

OBJECTIVE TYPE QUESTIONS

MULTIPLE CHOICE QUESTIONS

1. ii)cerebellum
2. i)Testosterone
3. iv)positive phototropism, negative geotropism and negative hydrotropism
4. ii)lack of dietary iodine
5. iv)Increase in the level of glucose in blood

ASSERTION-REASONING QUESTIONS

- 1.i)
- 2.iv)
- 3.i)
- 4.ii)
- 5.ii)

ONE MARK QUESTIONS

- 1.Cerebrum
- 2.A sudden involuntary response to a stimulus controlled by the spinal cord is called a reflex.
- 3.The peripheral nervous system facilitates communication between brain and spinal cord with the other body parts.
- 4.Gibberillin is a growth promoting hormone and ABA is a growth inhibiting phytohormone.

TWO MARK QUESTIONS

1.

Growth dependent movement	Growth independent movement
Specific growth is seen in growth dependent movements	Specific growth is not seen in growth independent movements.
These movements are directional.	These movements are non directional.

2. Brain is protected by a triple layered fluid filled membrane called meninges and outer to the

meninges there is the bony protection of the cranium

3. Adrenaline is called the emergency hormone.

It enables the body to face emergency situations by increasing respiratory rate, heart rate, blood pressure, blood flow to the muscles etc.

4. Pancreas help in maintaining glucose level in blood through the secretion of two hormones insulin and glucagon

THREE MARK QUESTIONS

1. Our body needs a hormonal system even though there is an effective nervous system because

-i) All cells of the body are not in contact with the nervous system

ii) Messages travel through neurons in form of electric signals, so it takes sometime for the cells to reset.

2. The sex glands act as endocrine glands by producing sex hormones. In male, testes is the sex

gland and it produces the male hormone testosterone. In females, ovaries are the gonads and

they produce the female hormone oestrogen. Both these hormones help in the development of secondary sexual characters during puberty. They also help in the further development of

the parts of the reproductive system.

3. Three characteristics of hormones in animals are:

i) They are made up of protein or steroid molecules.

ii) They are specific in action and so act only on target organs or tissues.

iii) The effect of hormonal action is for long term.

4. The time and amount of hormone secretion is controlled by the feedback mechanism.

For example:

When the amount of glucose increases in the blood due to reduction in amount of insulin, the pancreas is stimulated to increase the production of insulin. When the level of glucose becomes normal, insulin production is stopped.

FIVE MARK QUESTIONS

1.i) (a)-cerebellum and (b)-pons.

ii)The endocrine gland c is thyroid.It produces the hormone thyroxin.The function of this hormone is to control the overall metabolism of carbohydrates,proteins and fats in the body.

iii)Iodine is needed for the production of thyroxin hormone by the thyroid gland.If there is deficiency of iodine,then the hormone production stops and the gland swells up resulting in the disease called simple goitre.

iv)Endocrine glands are called ductless glands as they do not have ducts to carry their secretions.They pour their secretions directly into the blood and reach out to the target sites.

2.a)Complete the following table:

Receptor	location	stimulus
Gustatory	i).....Tongue.....	Taste
ii)...Auditory/Phonoreceptors....	Ears	Sound
iii)...Photoreceptors.	iv)...Eyes.....	Light

b)i)Membrane surrounding the brain acts as a shock absorber as it has a fluid in between its layers .

ii)Diabetic patients have higher level of glucose in blood as the amount of insulin produced is either too low or nil.Insulin helps in reducing glucose in blood

iii)Folding of leaves of mimosa plant when touched is a growth independent movement as here there is no specific growth occurring.The movement here is brought about by regulating water content in the cells

EXEMPLAR QUESTIONS

1.When an electrical signal reaches the axonal end of a neuron, it releases a chemical substance.

This chemical diffuses towards the dendrite end of next neuron where it generates an electrical impulse or signal. Hence, the electrical signal is converted into a chemical signal at the axonal end. Since these chemicals are absent at the dendrite end of the neuron, the electrical signal cannot be converted into chemical signal.

2.(a) elongation of cells -Auxin

(b) growth of stem -Gibberellin

(c) promotion of cell division - Cytokinin

(d) falling of senescent leaves -Abscisic acid

3. General growth refers to different types of developmental process in the body like increase in height, weight gain, changes in shape and size of the body but sexual maturation is specific

to changes reflected at puberty like cracking of voice, new hair patterns, development of mammary glands in female etc.

4. Pancreas is called a dual gland as it functions both as an endocrine gland and a digestive gland. It produces hormones and also pancreatic juice. So it helps in both, controlling body functions and also in the process of digestion. Sex glands are another example for dual glands.

PREVIOUS BOARD QUESTIONS

1)

Reflex action	Walking
It is involuntary action	It is a voluntary action.
Reflex action is controlled by spinal cord	Walking is controlled by the brain

2)(a) Thyroid -Hormone is thyroxin-Function of thyroxin is to control overall metabolism of carbohydrates, proteins and fats

(b) Pituitary -Hormone produced is growth hormone-Growth controls the physical development of the body especially the bones and muscles.

(c) Pancreas -Hormone produced is insulin-Insulin helps in reducing glucose level in blood

3)

Cerebrum	cerebellum
i)Cerebrum is part of fore brain	i)Cerebellum is the part of hind brain.
ii)The major functions of cerebrum is thinking and control actions related to sense organs	ii)Cerebellum is the part that controls balance and posture of body
iii)Cerebrum is the largest part	iii)cerebellum is the second largest part

4) (a)The use of iodised salt is advisable as iodine is needed for producing thyroxin hormone by thyroid gland. Deficiency of iodine affects the production of thyroxin hormone needed for proper metabolism and also swelling of thyroid gland. Simple goitre is the disease caused due to iodine deficiency. Swelling in the throat region is the major symptom of simple goitre.

(b)Nerve impulses travel through a neuron in the form of electric signals. On reaching a synapse, a chemical released by the nerve ending of the neuron starts an electric signal in the next neuron.

5) Directional growth dependent movement in response to water in plants is called hydrotropism.

Activity to demonstrate hydrotropism

Fill a tray with sand and insert a porous pot that has water filled in it.

Put some seeds into the soil and keep the tray near a window.

Observe the development of the seeds for a week.

Take one of the germinating seed after a week from the tray and observe the root development.

Observation-It is observed that the roots have grown in the direction of the porous pot that contained water.

6)(i)Thyroid Stimulating Hormone

(ii)TSH stimulates thyroid gland to produce thyroxine.

(iii)High TSH levels and hypothyroidism can cause chances of miscarriage. So TSH level in pregnant women need to be monitored.

(iv)Proper medication is needed as the TSH level is high.

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