



INDIAN SCHOOL AL WADI AL KABIR

Class: VIII	DEPARTMENT: SCIENCE 2020 -21	DATE: 20-12-2020
WORKSHEET NO: 15 WITH ANSWERS	TOPIC: REACHING THE AGE OF ADOLESCENCE	NOTE: A4 FILE FORMAT
NAME OF THE STUDENT	CLASS & SEC:	ROLL NO.

I. OBJECTIVE TYPE QUESTIONS:

TICK THE CORRECT OPTION FOR THE FOLLOWING:

- The stoppage of menstruation is called:
a. Menarche **b. Menopause** c. Puberty d. Adolescence
- When does adolescence begin and end respectively?
a. begins at the age of 9 and ends at the age of 14
b. begins at the age of 11 and ends at the age of 18
c. begins at the age of 15 and ends at the age of 11
d. begins at the age of 18 and ends at the age of 13
- The male hormone is:
a. Oestrogen b. Progesterone **c. Testosterone** d. All of these
- Insulin is produced by:
a. Pituitary gland b. Thyroid gland c. Adrenal gland **d. Pancreas**
- Fertilisation is the:
a. Production of sperms.
b. Production of eggs.
c. Fusion of both sperm and egg.
d. None of these.
- The number of chromosomes present in the human cell:
a. 22 pairs **b. 23 pairs** c. 24 pairs d. 25 pairs
- Features which help to distinguish a male from a female is called
a. Primary sexual characteristics.
b. Secondary sexual characteristics.
c. Tertiary sexual characteristics.
d. None of these.

Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below

- i) Both A and R are true and R is 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**-Mother is not completely responsible for the sex of the child.
Reason- The child gets one sex chromosome from the mother and other from the father.
Ans: Both assertion and reason are correct statements, and reason is the correct explanation of the assertion.
2. **Assertion**- If the water in which tadpoles are growing does not contain sufficient iodine, the tadpoles cannot become adults.
Reason- Metamorphosis of frog is controlled by thyroxine hormone.
Ans: Both assertion and reason are correct statements, but reason is not the correct explanation of the assertion.
3. **Assertion**- Most of the teenagers suffer from acne and pimples.
Reason- It is due to the increased activity of Thyroid glands during adolescence.
Ans: Assertion is true but reason is false.

II.BASIC CONCEPTS LEVEL QUESTIONS:

1. What is puberty?
[Hint: The period during which adolescent boys and girls reach sexual maturity and become capable of reproduction is called puberty.]
2. What is adolescence? Why is adolescence also called as teenage?
[Hint: The period of life, when the body undergoes changes, leading to reproductive maturity is known as adolescence. Generally, adolescence begins at the age of 11 and lasts up to 18 or 19 years of age.
Adolescents are also called teenagers because they cover the period of the 'teens' i.e. 13 to 18 or 19 years of age.]
3. Do both boys and girls grow at the same rate?
[Hint: Girls grow faster than boys but by about 18 years of age, both reach their maximum height. The rate of growth in height varies in different individual.]
4. Name the emergency hormone. Why is it called so?
[Hint: Adrenalin. It helps the body to adjust to stress due to anger, worry or embarrassment.]
5. Mention the changes observed in adolescents with respect to:
 - a. Physical appearance
[Hint: In boys, at the age of puberty, shoulders generally broaden as a result of growth. In boys, the muscles of the body grow prominently than in the girls.
In girls, the region below the waist becomes wider. The muscles also comparatively grow less.]
 - b. voice pattern
[Hint: Boys develop larger voice boxes (Larynx) to form a protruding part of

throat called Adam's Apple. Boys have deep voice or low-pitched voice .
In Girls, larynx is hardly visible (Adam's apple is not visible). They have high pitched voice.]

6. What are secondary sexual characters? Write the secondary sexual characters found in both boys and girls at the onset of puberty.

[Hint: The characters that help in distinguishing the males from the females are called secondary sexual characters.

- **Secondary Sexual Characters in Boys:** Facial hairs, deep voice and hair on chest.
 - **Secondary Sexual Characters in Girls:** high pitched voice and growth of body hair.]
7. Define the following terms- a. Menstruation b. Menarche c. Menopause

[Hint: **Menstruation** The breakdown and removal of inner thick and soft lining of uterus along with its blood vessels in the form of vaginal bleeding is called **Menstrual** flow or **menstruation** or periods.

Menarche: The first menstrual flow which begins at puberty is known as menarche.

Menopause: At 45 to 50 years of age, the menstruation cycle stops. Stoppage of menstruation is known as menopause.]

8. What are hormones? Mention their role in initiating reproductive function.

[Hint: Hormones are chemical substances secreted in endocrine glands. They also known as ductless glands. Hormones control the changes that occur at adolescence. The male hormone called testosterone is secreted by the testes at the onset of puberty and cause development of facial hair, chest hair etc. At the onset of puberty in girls, ovaries secrete female hormone or oestrogen which makes the breast develop.]

9. State the importance of: a. Insulin b. Thyroxine c. Adrenaline d. Oestrogen e. Testosterone.

[Hint: a. Insulin .Maintain the levels of blood sugar. Lack of insulin can lead to a condition called diabetes.

b. Thyroxine. Required for regulating body metabolism. Lack of thyroxine causes goitre.

c. Adrenaline. Helps the body to adjust to stress due to anger, worry or embarrassment.

d. Oestrogen: Makes the breast develop.

e. Testosterone: Cause development of facial hair, chest hair etc.]

III. INTERMEDIATE LEVEL QUESTIONS:

1. In human females, each time during maturation and release of egg the inner wall of uterus thickens. Is this thickening permanent? Give reasons.

[Hint- No, this thickening of the uterine wall is not permanent. If the egg gets fertilised, it starts developing and gets embedded in the uterine wall resulting in pregnancy.

However, if fertilisation does not occur, the released egg and the thickened lining are shed off resulting in menstruation.]

2. During adolescence females have a very high-pitched voice while the males have a deeper voice. Why?

[Hint: Boys develop larger voice boxes (Larynx) .Hence have a deeper voice.

- In females , larynx is hardly visible . Hence they have high pitched voice.]
3. Why are adolescents advised to maintain proper personal hygiene?
[Hint: Proper personal is more necessary for teenagers because the increased activity of sweat glands makes the body smelly. So, daily bath is necessary. If all body parts are not washed or cleaned every day, the chances of bacterial infection are more. Girls should take special care of cleanliness during the time of menstrual flow.]
 4. What is meant by metamorphosis? What is the role of hormones in the metamorphosis of frogs?
[Hint: The change from larva to adult is called metamorphosis. In frog, metamorphosis from tadpole to adult frog is controlled by thyroxine hormone which is produced by thyroid gland. Thyroxine production requires the presence of iodine in water.]

IV. ADVANCED LEVEL QUESTIONS:

1. Write a short note on the sex determination in an unborn baby.
[Hint: All human beings have 23 pairs of chromosomes in nuclei of their cells. Two chromosomes out of these are the sex chromosomes known as X and Y. A female has two X chromosomes whereas a male has one X and one Y chromosomes. Sex of the unborn child depends on whether the zygote has XX or XY chromosomes.
➤ If a sperm with X chromosome fertilises the egg, the zygote thus formed will lead to birth of a girl child.
➤ If a sperm with Y chromosome fertilises the egg, the zygote thus formed will lead to birth of a male child]
2. Why is it important for adolescents to have balanced diet?
[Hint: Adolescence is a stage of rapid growth and development. Hence, the balanced diet is very important at this stage. Here, balanced diet means that the meals should include proteins, carbohydrates, fats, minerals and vitamins in requisite proportion.]
3. Name the hormone which would be released during the following situations:
 - a. a frightened person.
 - b. growth of a child to adult.
 - c. development of caterpillar to moth.
 - d. development of tadpole to frog.[Hint: a-Adrenaline, b-Growth hormone, c--Insect hormone d- thyroxine]
4. Salma had a very soft and smooth skin during her childhood. As she entered adolescence, she developed pimples on her face. The skin specialist advised her to wash her face at regular intervals. Can you explain the reasons for the appearance of pimples on her face and suggest ways to prevent them?
[Hint- During adolescence, the secretion of sweat glands and sebaceous glands increases leading to formation of acne and pimples. Regular face wash keeps the face clean and dry and helps to reduce the pimples.]

V-EXEMPLAR QUESTIONS:

1. John and Radha were classmates since childhood. When Radha became eleven years old, she developed a little swelling on her neck. She visited the doctor who started medication for her. After a few years, John also developed a slight protrusion on his throat. He got worried and went to the doctor. But, the doctor assured him that it was a normal feature in boys while they are growing up. Can you think of any reasons for the difference in diagnoses?

[Hint- The swelling on the neck of Radha may have been because of goitre, a condition of the thyroid gland during which the gland produces insufficient quantity of thyroxine. However, the protrusion in John's throat would be Adam's apple, a result of growth of voice box in adolescent boys.]

2. It is believed that height of a child depends upon the genes inherited from parents. However, it is often seen that tall parents may have short children and vice-versa. Are there factors other than genes, that can cause these variations?

[Hint- Nutrition, hormones, exercise and disease etc.]

PREPARED BY: Mrs. SUMA SENU	CHECKED BY : HOD - SCIENCE
-----------------------------	----------------------------