

CBSE NCERT Solutions for Class 8 Science Chapter 10

Back of Chapter Questions

1. What is the term used for secretions of endocrine glands responsible for changes taking place in the body?

Solution:

Hormones are chemical messengers secreted by ductless glands. They are responsible for changes taking place in the body.

2. Define adolescence.

Solution:

Adolescence is the period between the beginning of puberty. It begins around the age of 11 and lasts till 18 or 19 years of age. The period of adolescence may vary from person to person. During this time, two types of changes take place in the body:

- Adolescence is the onset of reproductive maturity.
- Development of secondary sexual characters.

3. What is menstruation? Explain.

Solution:

Menstruation is the process of the shedding of the uterine layer. It begins at puberty. It is also known as monthly discharge. The inner lining of the uterus becomes thick and is supplied with blood to nourish the embryo. If the egg is left unfertilized, then the lining of the uterus breaks down and gets released in the form of blood through the vagina. The shedding of the uterine layer lasts for about two to five days. This cycle occurs every month and is known as the menstrual cycle.

4. List changes in the body that take place at puberty.

Solution:

Changes onset of puberty:

- A drastic increase in height and weight.

- ii. Broadening of shoulders and widening of the chest in boys. In girls, the region below waist becomes wider.
 - iii. In boys, under the influence of hormones, the larynx becomes prominent it protrudes out, and this is known as Adam's apple. The vocal cords become longer and thicker. These changes cause the voice to become hoarse.
 - iv. The appearance of hair in areas such as underarms, face, hands, and legs.
 - v. The appearance of acne as a result of excessive secretion of oil from the skin.
 - vi. Testis grows and starts producing sperms in males, whereas in females, the ovary enlarges and starts producing matured eggs.
5. Prepare a table having two columns depicting names of endocrine glands and hormones secreted by them.

Solution:

Endocrine glands	Hormones
Testis	Testosterone
Ovary	Oestrogen
Thyroid	Thyroxine
Adrenal	Adrenalin
Pancreas	Insulin
Pituitary	Growth hormone

6. What are sex hormones? Why are they named so? State their function.

Solution:

Sex hormones are chemical substances produced by sex organs. For example, testosterone is the male sex hormone produced by the testis, and oestrogen is the female sex hormone produced by the ovary. Sex organs secrete these hormones and affect the sexual features of an organism. Hence, they are known as sex hormones.

Functions of sex hormones:

Testosterone:

This hormone is responsible for the development of secondary sexual characters in boys such as the growth of a beard, the voice becoming hoarse, development of reproductive organs, etc.

Oestrogen:

This hormone is responsible for the development of secondary sexual characters in females such as the enlargement of breasts, development of female reproductive organs, etc.

7. Choose the correct option.

- (a) Adolescents should be careful about what they eat, because
- (i) Proper diet develops their brains.
 - (ii) Proper diet is needed for the rapid growth taking place in their body.
 - (iii) Adolescents feel hungry all the time.
 - (iv) Taste buds are well developed in teenagers.
- (b) Reproductive age in women starts when their
- (i) Menstruation starts.
 - (ii) Breasts start developing.
 - (iii) Body weight increases.
 - (iv) Height increases.
- (c) The right meal for adolescents consists of
- (i) Chips, noodles, coke.
 - (ii) Chapatti, dal, vegetables.
 - (iii) Rice, noodles and burger.
 - (iv) Vegetable cutlets, chips and lemon drink.

Solution:

- (a) The correct option is (ii) Adolescents should be careful about their diet because the proper diet is needed for the rapid growth taking place in their body.
- (b) The correct option is (i) Reproductive age in females starts with their menstruation.

(c) The correct option is (ii) The right meal for adolescents consists of chapati, dal, vegetables.

8. Write notes on:

- (a) Adam's apple.
- (b) Secondary sexual characters.
- (c) Sex determination in the unborn baby.

Solution:

(a) Adam's apple:

It is a protrusion in the neck part of human males. It is a feature of adult males because its size in males increases during puberty.

(b) Secondary sexual characters:

Secondary sexual characters are those features that help in distinguishing the male and the female body from each other. They are physical or behavioural characteristics that appear in humans at the time of puberty.

Secondary sexual characters in boys:

- (i) The appearance of moustache and beard.
- (ii) The appearance of chest hair.
- (iii) Growth of hair in the genital area and other parts of the skin.

Secondary sexual characters in girls:

(i) Increase in breast size and darkening of the skin of nipples present at the tip of the breasts.

(ii) Growth of hair in the genital area and other body parts.

(c) Sex determination in an unborn baby:

The sex of a baby is determined by the type of male gamete that fuses with the female gamete.

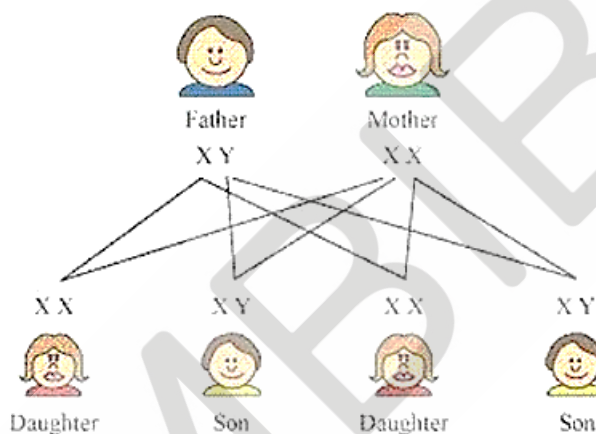
All human beings have 23 pairs of chromosomes in their nuclei. Out of these 23 pairs, the last pair is known as the sex chromosome.

The human males have 23 pairs of chromosomes, including XY sex chromosomes. Therefore, the male gamete has 22 chromosomes and either an X or Y sex chromosome.

Male gametes can be of two types: 22+X or 22+Y

Females have 23 pairs of chromosomes, including XX sex chromosomes. Therefore, their gametes can only have 22 chromosomes and one X sex chromosome,

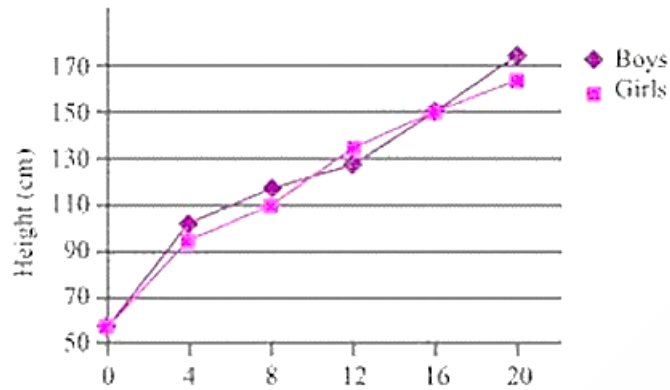
Type of female gametes: 22+X



Thus, as the mother provides only X chromosome, the sex of the baby is determined by the type of male gamete (X or Y) that fuses with the X chromosome of the female.

9. The table below shows the data on likely heights of boys and girls as they grow in age. Draw graphs showing height and age for both boys and girls on the same graph paper. What conclusions can be drawn from these graphs?

Age(years)	Height (cm)	
	Boys	Girls
0	53	53
4	96	92
8	114	110
12	129	133
16	150	150
20	173	165

**Solution:**

The graph explains the relation between the age and height of both boys and girls. During puberty, there is a drastic increase in height in both boys and girls. Based on the above graph, it can be concluded that

During the age of 4-8 years, girls have less height as compared to boys.

In between 12-13 years there is a sudden increase in the height of girls and becomes more than boys. In later years, growth in both sexes become stable.

Growth in puberty is due to the hormones produced in the body.

