



## Exercise Questions

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

**Soln:**

The chemical substance secreted by the endocrine glands is called hormones. Hormones are responsible for the changes taking place in the body.

2. Define adolescence.

**Soln:**

The period which comes between the beginning of adulthood and puberty is called adolescence. In this period, the body undergoes different changes alongside attaining reproductive maturity. It starts somewhat at the age of 11 and ends at the age of 18 or 19. The period of adolescence may differ from person to person.

3. What is menstruation? Explain.

**Soln:**

The process of shedding the uterine lining on a regular monthly basis is called menstruation. It starts at puberty and in the reproductive cycle of the female body. The uterus prepares itself to receive a fertilized egg on every month. Due to this, the inner lining of the uterus becomes thick and is supplied with blood to nourish the embryo. If the egg is not fertilized, then the lining of the uterus breaks down and gets released in the form of blood through the vagina. The time period for this is about 2 to 8 days every month. This monthly cycle is known as the menstrual cycle.

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

**Soln:**

The changes that take place at the time of puberty are as follows: a)

The height and weight of the body will suddenly increase

b) The hair seems to appear in the areas such as legs, hands, face and underarms

c) In females, the enlargement of the ovary takes place and starts producing matured eggs, and on the other hand, in males, the testis grows and starts producing sperms

d) In males, the shoulder broadens, and the chest becomes wide, whereas in females, the region below the waist becomes wider.

e) Acne seems to appear because of the excessive secretion of oil from the skin.

f) In boys, the larynx becomes prominent under the influence of hormones, and the vocal cord becomes longer and thicker, resulting in a hoarse voice.



5. Prepare a Table having two columns depicting the names of endocrine glands and hormones secreted by them.

Soln:

Endocrine Glands	Hormones
Testis	Testosterone
Ovary	Oestrogen
Pituitary	Growth hormone
Adrenal	Adrenalin
Thyroid	Thyroxin
Pancreas	Insulin

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

Soln:

The chemical substances produced by the sex organs are called sex hormones. For example, in females, the sex hormone produced by the ovary is called oestrogen and in males, the sex hormone produced by the testis is called testosterone.



Some of the functions performed by the sex hormones:

**Oestrogen:** This hormone is responsible for the development of secondary sexual characteristics in females, like enlargement of breasts, development of female reproductive organs, etc.

**Testosterone:** This hormone develops secondary sex characteristics in boys, such as the growth of beard, the voice becoming hoarse, the development of the 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) chapati, dal, vegetables.  
(iii) rice, noodles and burger.  
(iv) vegetable cutlets, chips and lemon drink.

**Soln:**

- a) (ii) proper diet is needed for the rapid growth taking place in their body. b)  
(i) menstruation starts.  
c) (ii) chapati, dal, vegetables.

## 8. Write notes on—

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

**Soln:**

- a) **Adam's apple:** In human males, the larynx grows larger at the time of puberty and can be seen as a protruding part of the throat. This protrusion is known as Adam's apple. In boys, under the influence of sex hormones, the larynx



becomes prominent. Due to this, the vocal cord becomes thicker and longer, which causes the voice to be hoarse. On the other hand, in females, the larynx is small and hardly visible. Therefore, girls have a high-pitched voice while boys have a deep voice.

b) **Secondary sexual characters:** Characters which usually appear during the phase of puberty are called secondary sexual characteristics. These are the features that help distinguish the male and female bodies from each other. Characteristics seen in males: Hoarseness of voice, the appearance of beard, broadness of chest, growth of hair in genital areas.

Characteristics seen in females: Start of the menstrual cycle, growth of breasts, growth of hair in the genital areas.

c) **Sex determination in the unborn baby:** The sex of an unborn baby depends upon the pair of sex chromosomes that are present in the cells of the baby.

X and Y chromosomes are the sex chromosomes in humans. Ovum always contains X chromosome, and male sperm may carry either the X chromosome or Y chromosome. Male genetic make-up is 44 autosomes + XY chromosome, and female genetic make-up is 44 autosomes + XX chromosomes.

### 9. Word game:

Use the clues to work out the words.

#### Across

3. Protruding voice box in boys

4. Glands without ducts

7. Endocrine gland attached to brain

8. Secretion of endocrine glands

9. Pancreatic hormone

10. Female hormone

#### Down

1. Male hormone

2. Secretes thyroxine

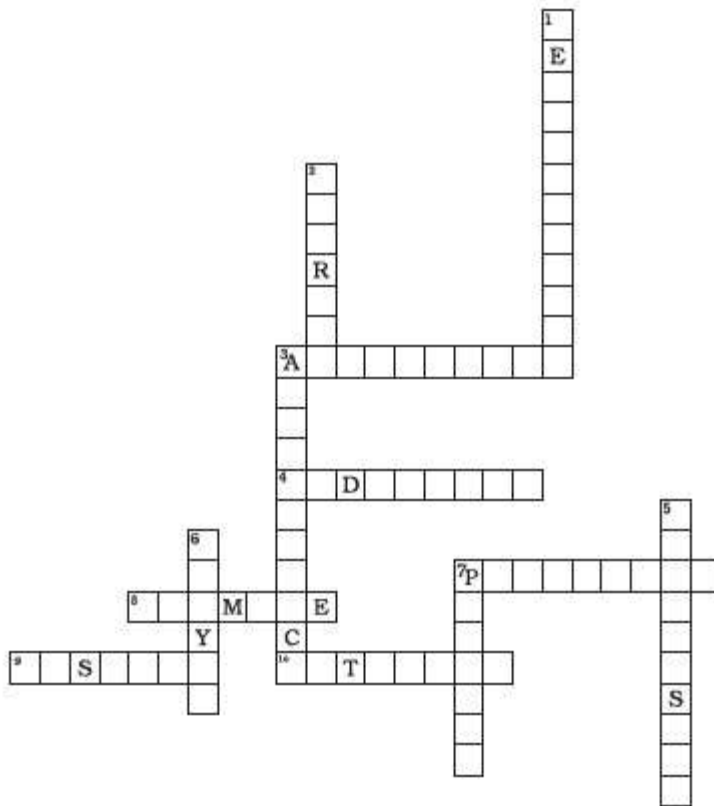
3. Another term for teenage

5. Hormone reaches here through blood stream

6. Voice box

7. Term for changes at adolescence





**Soln:**

**Across**

1. Adam's apple
2. Endocrine
3. Pituitary
4. Hormone
5. Insulin
6. Estrogen

**Down**

1. Testosterone
2. Thyroid
3. Adolescence
4. Target site
5. Larynx
6. Puberty

