

CHAPTER -7

REACHING THE AGE OF ADOLESCENCE

EXERCISES

1 Mark Questions

Q1: What is the term used for chemical secretions of endocrine glands responsible for changes taking place in the body?

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

Q2: What are ductless glands?

Answer: Ductless glands are those glands, from which the hormones are directly poured into the blood.

Q3: Define hormones.

Answer: Hormones are secretions from endocrine glands.

Q4: Which is the age of adolescence?

Answer: The period of development from childhood to womanhood or manhood is the period of adolescence.

Q5: Which is the prescribed marriageable age for boys and girls?

Answer: Marriageable age for girls is 18 years and for boys is 21 years.

Q6: Name the glands

1. which secrete juices
2. Which secrete hormones?

Give one example in each case.

Answer: Exocrine glands, e.g., liver secretes bile.

Endocrine glands, e.g., adrenal gland.

Q7: What is “female foeticide”?

Answer: Killing of the female foetus in the mother’s womb is known as female foeticide.

Q8: What is the difference in the reproductive activity of male and female humans?

Answer:

In male humans the reproductive activity is from puberty to 60 or 70 years.

In female humans the reproductive activity is from puberty to 45 to 50 years.

2 Mark Questions

Q1: Define adolescence.

Answer: 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.

Q2: What is menstruation? Explain.

Answer: 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.

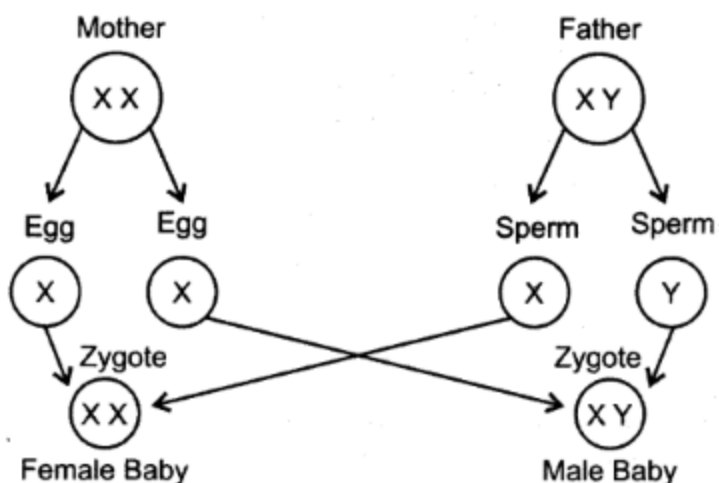
Q3: Name the hormones secreted by pancreas. Give function of each secretion.

Answer: Glucagon and insulin are secreted by pancreas.

- Glucagon which helps to break down glycogen in liver to raise blood glucose level.
- Insulin which helps to reduce blood glucose level and maintains the sugar level.

Q4: Show diagrammatically how the sex of the child is determined?

Answer:



Q5: What circumstances led to female foeticide being illegal?

Answer: In our country female foeticide is illegal because the female population is decreasing. In Indian society, girls are considered a burden. Lot of expenditure is incurred as dowry on girls' marriage. Also due to ill treatment by family members, many social groups kill their daughters.

Q6: What do you understand by X and Y chromosomes?

Answer: X chromosomes stand for female characters and Y chromosomes for male characters.

Q7: Name the endocrine gland and the hormone which

- 1. Maintain calcium in the blood.**
- 2. Regulate calcium in the body.**
- 3. Regulate menstrual cycle.**

Answer:

Gland	Hormone
Thyroid	Calcitonin
Parathyroid	Parathyroid Hormone
Ovaries	Progesterone.

Q8: List changes in the body that take place at puberty.

Answer:

1. Increased height.
2. Better development of muscles.
3. Change in body shape.
4. Change in voice.
5. More sweating from sweat glands.
6. More secretions from oil glands.
7. Development of secondary sex characters.
8. Attainment of mental, intellectual and emotional stability.

5 Mark Questions

Q1: List changes in the body that take place at puberty.

Answer: 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.

Q2: Prepare a table having two columns depicting names of endocrine glands and hormones secreted by them.

Answer:

Endocrine glands	Hormones
1. Pituitary gland	(i) Growth hormones
2. Ovaries	(ii) Estrogen
3. Testes	(iii) Testosterone
4. Thyroid	(iv) Thyroxin

5. Pancreas	(v) Insulin
6. Adrenal glands	(vi) Adrenaline

Q3: What are sex hormones? Why are they named so? State their function.

Answer: 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 estrogen and in males, the sex hormone produced by the testis is called testosterone.

Some of the functions performed by the sex hormones:

Estrogen: 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.

Q4: Write notes on—

(a) Adam's apple.

(b) Secondary sexual characters.

(c) Sex determination in the unborn baby.

Answer:

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.

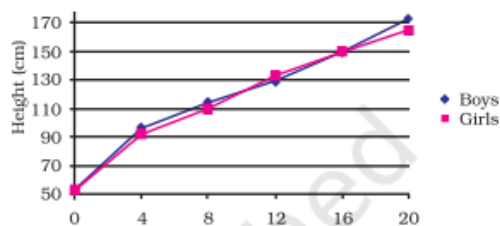
Characteristics seen in males: Hoarseness of voice, the appearance of beard, broadness of chest, growth of hair in genital areas.

Characteristics seen in females: Start of the menstrual cycle, growth of breasts, and 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.

Q5: 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



Answer:

From the above graph, we conclude that initially boys grow faster than girls from 0-8 years, and girls grow faster than boys from 8-16 years. But both reach their maximum height at the age of 20. Here boys show a greater increase in height than girls.

Fill in the blank

1. Endocrine glands release hormone directly into the ____ for transportation to the ____

Answer: blood, target organs

2. Permanent stoppage of menstruation is known as ____

Answer: menopause

3. Release of sex hormones is under the control of a hormone secreted from the ____

Answer: pituitary gland

4. Gender of child having zygote with an X and a Y chromosomes ____

Answer: Male child

5. Another name for the voice box in male is ____

Answer: Adams apple

Multiple Choice Questions

1. Adolescents should be careful about what they eat, because:

- (a) Proper diet develops their brains.
- (b) Proper diet is needed for the rapid growth taking place in their body.
- (c) Adolescents feel hungry all the time.
- (d) Taste buds are well developed in teenagers.

Answer: (b) Proper diet is needed for the rapid growth taking place in their body.

2. Reproductive age in women starts when their:

- (a) Menstruation starts.
- (b) Breasts start developing.
- (c) Body weight increases.
- (d) Height increases.

Answer: (a) Menstruation starts.

3. The right meal for adolescents consists of:

- (a) Chips, noodles, coke.
- (b) Chapati, dal, vegetables.
- (c) Rice, noodles and burger.
- (d) Vegetable cutlets, chips and lemon drink.

Answer: (b) Chapati, dal, vegetables.

4. The spurt in physical growth is evident in girls between

- (a) 11-13 years
- (b) 13-15 years
- (c) 15-17 years
- (d) 17-19 years

Answer: (b) 13-15 years

5. Adam's apple is observed in

- (a) Boys
- (b) girls
- (c) both boys and girls
- (d) none of these

Answer: (a) Boys

6. Testosterone in boys is produce from secretion of

- (a) adrenal gland
- (b) pituitary gland
- (c) thyroid gland
- (d) parathyroid gland

Answer: (b) pituitary gland

7. In amphibians, metamorphosis is done by

- (a) thyroid gland
- (b) adrenal gland
- (c) pituitary gland
- (d) pineal gland

Answer: (a) thyroid gland

8. If an adolescent does not eat sufficient fresh fruits and vegetables, he will be deficient in

- (a) vitamin A
- (b) vitamin D
- (c) vitamin C
- (d) vitamin B-complex

Answer: (c) vitamin C

9. One ovum is released in females once in every

- (a) 28 days
- (b) 38 days
- (c) 18 days
- (d) 08 days

Answer: (a) 28 days

10. When we are under stress or angry, the hormone which helps us to adjust, is

- (a) insulin
- (b) adrenaline
- (c) thyroxin
- (d) none of these

Answer: (b) adrenaline

PUZZLE

Use the clues to work out the words.

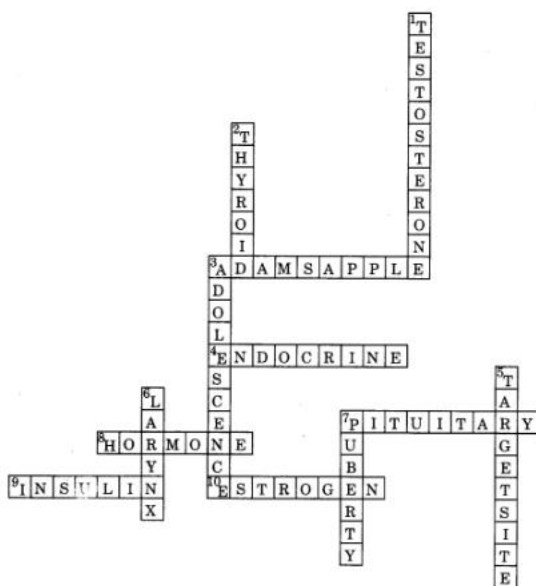
Across

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

Answer:



SUMMARY

- The phase of development during which a kid transforms into an adult is known as adolescence. This is a time of fast growth and development.
- Both girls and boys experience a change in voice during puberty. In boys, the larynx enlarges during puberty and can be seen as a protruding portion of the throat; this protrusion is known as the Adam's apple.
- Hormones are secretions of endocrine glands, which are also known as ductless glands because they pour their secretions directly into the blood stream and reach regions of the body. Hormones influence the beginning of puberty and the maturity of reproductive parts
- It is important to eat balanced food and maintain personal hygiene during adolescence. Taking drugs can spoil the life .Sometimes per pressure can lead to bad habits.