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## **REACHING THE AGE OF ADOLESCENCE**

### **TEXTBOOK QUESTIONS AND THEIR ANSWER**

**Q.1. I wonder how long this period marked by changes in the body will last!**

**Ans.** The human body undergoes several changes during adolescence. These changes mark the onset of puberty. It ends when an adolescent reaches reproductive maturity. So, adolescence begins around the age of 11 and last upto 18 or 19 years of age.

**Q.2. I wonder whether this period between childhood and adulthood has a special name!**

**Ans.** Yes, the period between childhood and adulthood has a special name called adolescence–period. So, the period of life, when the body undergoes changes, leading to reproductive maturity, is called adolescence.

**Q.3. Paheli and Boojho realised that sudden increase in height and hairy line above the lips in boys were signs of**

**adolescence. They wanted to know more about other changes at puberty.**

**Ans.** Changes at Puberty –

1. Increase in height.
2. Change in body shape.
3. Voice change.
4. Increased activity of sweat and sebaceous glands.
5. Development of Sex – organs, Male – Testis and penis develop completely. Female – Breast enlargement, ovary start releasing matured eggs.
6. Reaching mental, intellectual and emotional maturity.
7. Hairy line above the lips.

**Q.4. Many of Boojho's classmates have a hoarse voice. Why?**

**Ans.** At puberty, the voice box or the larynx begins to grow. So that boys develop larger voice boxes. It can be seen as a protruding part of the throat called Adam's apple.

In adolescent boys, sometimes, the muscles of the growing voice box go out of control and the voice becomes hoarse.

**Q.5. Boojho and Paheli want to know if reproductive life, once begun, continues, or it ends sometime.**

**Ans.** The capacity for maturation and production of gametes (reproductive life) lasts for a much longer time in males than in females.

In females, the reproductive phase of life begins at puberty (10 to 12 years of age) and generally lasts till the age of approximately 45 to 50 years.

**Q.6. Paheli says that the reproductive life of a woman lasts from menarche to menopause. Is she right?**

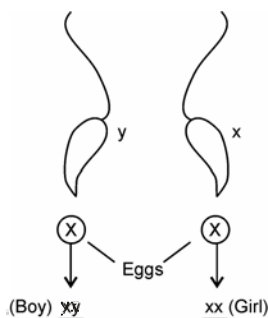
**Ans.** Yes, Paheli is absolutely right.

Menarche is the first menstrual flow, which begins at puberty.

Menopause is the stoppage of menstruation. In females, the reproductive phase of life begins at puberty (10 to 12 years of age) and generally lasts till the age of approximately 45 to 50 years.

**Q.7. I wonder what makes the fertilized egg develop either into a boy or a girl?**

**Ans.** When a sperm containing X chromosome fertilizes the egg, the zygote would have two X chromosomes which develops into a female child i.e. girl. If the sperm contributes a Y chromosome to the egg at fertilization, the zygote (yx) would develop into a male child i.e. boy.



Therefore, the sex chromosomes of the father determine the sex of an unborn baby.

#### **Q.8. Do some other animals also possess hormones?**

**Ans.** Yes, of course cow, buffalo, cat, dog and monkey all these animals possess different hormones, which control different body activities.

Hormones are the chemical substances. Different hormones which are present in the animals are –

1. Pituitary gland stimulates testes and ovaries to release **testosterone** (in male) and **estrogen** (in female) called sex-hormone.

2. Thyroid gland stimulate **thyroxine**, which change the larval stage of frog into adult stage.

Besides these hormones insulin and adrenalin hormones are also present in animals. The testosterone, estrogen and thyroxine (in frog) are the hormone which play a very important role in reproduction.

**Q.9. If people do not have enough iodine in their diet, will they get goitre caused by lack of thyroxine?**

**Ans.** Yes, if people do not have enough iodine in their diet, then they may get suffer from goitre. To get rid of this disease, people should use iodised salt.

**Q.10. Write a note on the importance of consuming iodised salt.**

**Ans.** Iodine in the diet prevents the humans from getting 'goitre'. A goitre disease occurs when thyroid gland does not produce the hormone-thyroxine.

As, the production of thyroxin requires the presence of iodine in water or in food. So the intake of iodised salt prevent us from getting the goitre disease.

**Q.11. What is the term used for secretion of endocrine glands responsible for changes taking place in the body?**

**Ans.** Hormones.

**Q.12. Define adolescence.**

**Ans. Adolescence :** The period of life, when the body undergoes changes, leading to reproductive maturity is called adolescence.

**Q.13. What is menstruation? Explain.**

**Ans.** When egg produced by ovary does not get fertilized, it along with the thickened lining of the uterus and blood vessels, get flown off out of the body every month as bleeding in women. This is called menstruation.

**Q.14. List the changes in the body that take place at puberty.**

**Ans.** Certain changes take place in the bodies of boys and girls at the age of puberty. These include :

- (i) Growing of hair at different body parts.
- (ii) Sudden increase in height.
- (iii) Growth of moustache and beard in boys.
- (iv) Voice of boys get hoarsed.
- (v) Development of breast in girls and hips get heavy.

(vi) Development of sex organs.

**Q.15. Prepare a table having two columns depicting names of endocrine glands and hormones secreted by them.**

**Ans.**

<b>Endocrine Glands</b>	<b>Hormones secreted</b>
(i) Thyroid	(i) Throxine
(ii) Pancreas	(ii) Insulin
(iii) Adrenal gland	(iii) Adrenalin
(iv) Pituitary gland	(iv) Growth hormone
(v) Testes	(v) Testosterone
(vi) Ovaries	(vi) Estrogen

**Q.16. What are sex hormones? Why are they named so? State their function.**

**Ans.** Hormones which constitute the secondary sexual characters are called sex hormones. It is because the sex is differentiated i.e., a boy is distinguished from a girl due to these hormones. Their function is to develop the secondary sexual characters in boys and girls. The male hormone or testosterone begins to be released by the testes at the onset of puberty. This causes

changes in boy like begin to grow facial hairs, that is (moustaches and beard) and hairs on their chest.

Female hormone or estrogen which makes the breasts develop. Mammary gland develop inside the breasts.

**Q.17. Choose the correct option.**

**(a) Adolescents should be careful about what they eat, because :-**

- (i) proper diet develops their brain.**
- (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) rice, *chapati*, *dal*, vegetables.**
- (iii) rice, noodles and burger.**
- (iv) vegetable cutlets, chips and lemon drink.**

**Ans.** (a) (ii), (b) (i), (c) (ii)

**Q.18. Write short notes on :**

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

**Ans. (a) Adam's Apple :** Adam's apple is a protruding part in the throat. It is the enlarged voice box or larynx, which gets enlarged at the onset of puberty. This makes the voice of the boys hoarse.

**(b) Secondary sexual characters :** These are the characters which distinguish a boy from a girl. Characters like hairs on chest, under the arms, development of breast, beard and moustaches etc. are all called secondary sexual characters.

**(c) Sex determination in unborn baby :** The sex of the unborn baby is determined by the sex chromosomes of the father. An unfertilized egg always have X chromosome. If a sperm contributes X chromosomes then the baby will be a female and if the sperm contributes Y chromosome, the baby will be a male. So, it is the father, who is responsible for the sex of the unborn baby.

**Q.19. Word game : Use the clues to work out the words.**

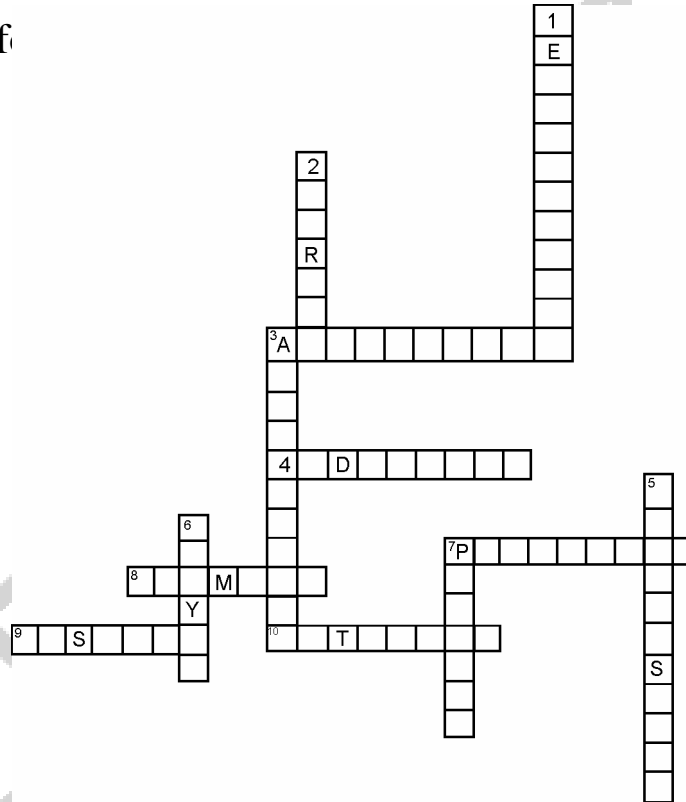
**Across**

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

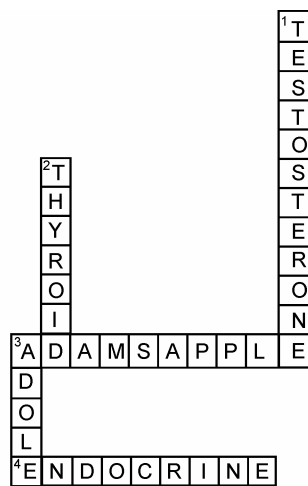
**Down ward**

1. Male hormone
2. Secretes thyroxine

3. Another term for teenage
5. Hormone reaches here through blood stream
6. Voice box
7. Term for

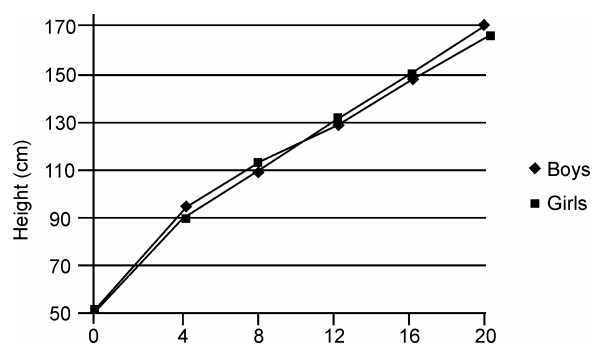


1. Testosterone
2. Thyroid
3. Adolescence
4. Endocrine
5. Target sites
6. Larynx
7. Puberty
8. Hormone
9. Insulin
10. Estrogen

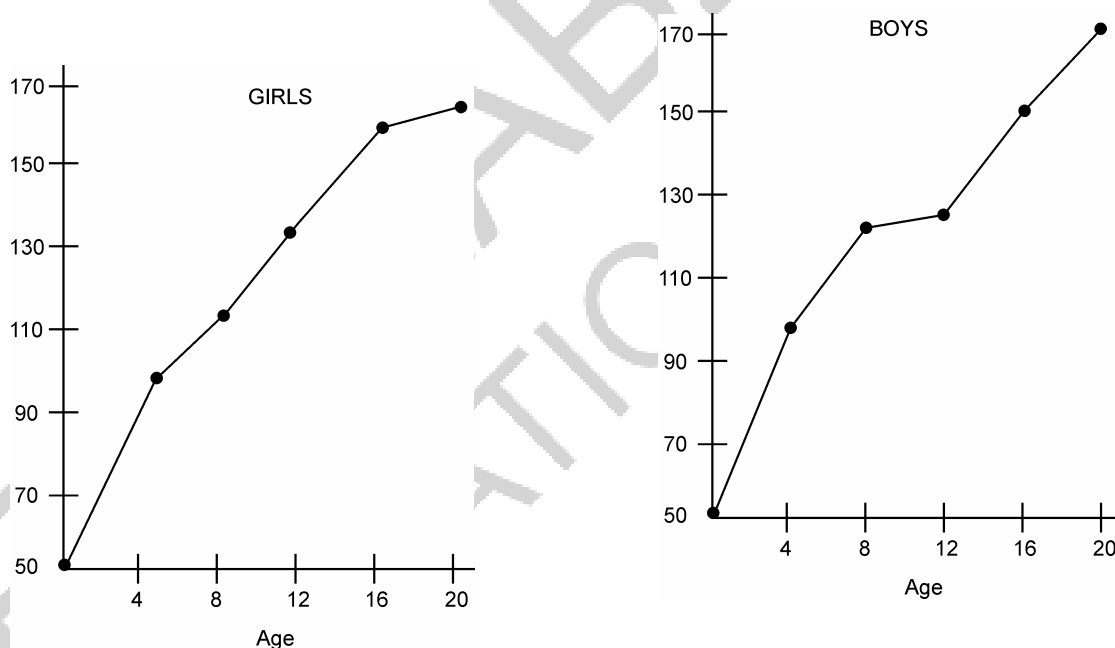


**Q.20.** The table below shows the data on likely heights of boys and girls as they grow in age. Draw graphs height and age for both boys and girls on the same graph paper. What conclusion can be drawn from these graphs?

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



**Ans.** We conclude that girls are taller than boys age of 12 years. At the age of 16 years both the girls and boys attain the same height but later some boys gain height and generally become taller than girls.



**Q.21. Find out the awareness of the legal status of early marriage.**

**Ans.** The legal marriageable age for girls is 18 years and for boys it is 21 years. Before this age marriage is considered a crime. Early marriage is not good for couples because they are not prepared physically and mentally for the responsibilities of

married life. A girl attains sexual maturity at age of about eighteen years. Before that her reproductive system is not fully prepared to bear a baby. Similarly boys are not capable of running the household as most of the boys at this age are pursuing their studies. So, the boys and girls should attain physical and mental maturity before getting married.

**Q.22. Collect newspaper cuttings and information in magazines about HIV/AIDS. Write a one page article of 15 to 20 sentences on HIV/AIDS.**

**Ans.** HIV/AIDS is a sexually transmitted disease (STD) that means this disease is mostly spread by sexual contacts with an HIV/AIDS infected person. AIDS stands for **Acquired Immunodeficiency Syndrome**. It is created by HIV virus. This disease is a fatal disease for which no permanent treatment has been devised by the scientists. AIDS is actually a disease which destroys the patient's immune system slowly. The damage is most of the time permanent and beyond repair. Due to weak immunity the patient easily falls prey to many diseases which eventually kill the person.

Prevention is the only cure for HIV/AIDS. It is advised that one should maintain sexual hygiene and practice safe sexual relationship with a single partner.

The other mean for transmission of AIDS are

1. HIV virus can pass on to a normal person from an infected person by sharing the syringes used for injecting drugs.
2. It can also be transmitted to an infant from the infected mother through her milk.

**Q.23. In our country, according to a census, there are 882 adolescent females for every 1000 males. Find out:**

- (a) the concerns of the community regarding this low ratio.  
Remember that the chance of having a boy or girl is equal.
- (b) what amniocentesis is and how useful this technique is.  
Why is its use for identification of sex of the unborn child banned in India?

**Ans.** (a) The society is quite concerned about the low ratio issue. This is going to create a problem for them in future as it will become difficult for the boys to find girls for marriage.

- (b) This is a technique which is used to know the sex of the unborn child and to see if all the organs of a fetus are developing well. It is banned in India to use this technique to determine the sex of the unborn child because they kill

the female fetus to have baby boys in future. This is called female foeticide. The female foeticide has disturbed the ratio of boys and girls in India.

**Q.24. Put your ideas together and write a short note on the importance of knowing facts about reproduction.**

**Ans.** It is important to know facts about reproduction because reproduction phase has to come in every body's life. It will help to handle all the physical and mental changes coming with sexual maturity in the bodies. It will also help in deciding one's own course of life in future and save for many STDs (Sexually Transmitted Disease).