

8th Science Lesson 14 Questions in English**14] Reaching The Age Of Adolescence**

1. What is defined as development of organisms?
- a) Physical growth period of any organism.
 - b) Maturity with experience for a progressive series of changes.**
 - c) Natural evolvement from the origin species.
 - d) Series of changes from the old times of species.

Explanation

Growing up is a natural process that takes place in all living organisms. All living organisms grow up to maturity which is the ability to respond to a particular environment. Maturity along with experiences produces a progressive series of changes in an organism. These series of changes are called development.

2. Which of these stages are involved in the developmental stages of human?
- a) Childhood, Infancy, Adulthood, Middle age, Old age
 - b) Infancy, Adolescence, Middle age, Old age
 - c) Infancy, Childhood, Adolescence, Adulthood, Middle age, Old age**
 - d) Childhood, Adulthood, Middle age, Old age

Explanation

Different phases of human development are called developmental stages. Human developmental stages include infancy, childhood, adolescence, adulthood, middle age and old age.

3. Which of this transition is called as adolescent period in human development stages?
- a) Childhood to Adulthood**
 - b) Infancy to Adulthood
 - c) Adulthood to Middle age
 - d) Childhood to Middle age

Explanation

Among all these stages, adolescence is the most crucial and significant period in an individual's life. It is the period of transition from childhood to adulthood.

4. On what age the period of adolescence ends in human developmental stage?
- a) 10
 - b) 13
 - c) 19**
 - d) 21

Explanation

The period of adolescence starts at the age of about 10 to 13 and ends at the age of 19 (commonly known as teenage).

5. What is the meaning of the root word of adolescence in Latin?

- a) To evolve
- b) To grow**
- c) Matured
- d) All the above

Explanation

The term adolescence is derived from the Latin word 'adolescere' meaning 'to grow' or 'grow to maturity'.

6. Which of these features are varied in the period of adolescence?

- a) Height and weight only
- b) Muscle mass only and sex organs only
- c) Brain structure and functions only
- d) All the above**

Explanation

During this period changes occur in height, weight, sex organs, muscle mass as well as in brain structure and function.

7. Which of the biological process is terminated in an individual during the adolescent period?

- a) Brain structure and functions
- b) Physical growth**
- c) Muscle mass
- d) Mental growth

Explanation

Biologically it is a physical transition marked by the onset of puberty and termination of physical growth in an individual.

8. Assertion (A): In puberty period the physical and physiological changes occur resulting in sexual maturity.

Reasoning (R): The age of beginning of puberty is common for every human.

- a) Both A and R is True and R is the correct explanation of A.
- b) Both A and R is True but R is not the correct explanation of A.
- c) A is True but R is False.**
- d) Both A and R is False.

Explanation

Puberty is a period of few years in which rapid physical; physiological and psychological changes occur resulting in sexual maturity. We can predict the sequence of physical changes that will take place but the age of beginning of puberty varies from individual to individual.

9. Which of these factors affect the onset and progression of puberty?

- a) Genetic and biological influences
- b) Nutrition and diet
- c) Life events and socioeconomic status
- d) All the above**

Explanation

The average age for the onset of puberty is 10 or 11 for girls and 12 or 13 for boys. But, factors like genetic and biological influences, life events, socioeconomic status, nutrition and diet and the amount of body fat also affect the onset and progression of puberty.

10. Which is not involved with puberty and adolescent period in a human life stage?

- a) Hormonal changes trigger physical and behavioral changes.
- b) Brain functions are at its final developmental stage.**
- c) Sex hormones are secreted at the time of puberty.
- d) Hormones activate sex glands to produce necessary secretions in human body.

Explanation

Hormones play an important role at the time of puberty. Changes in hormones during this period trigger physical and behavioral changes. Sex hormones secreted at the time of puberty activate the male and female sex glands to produce necessary secretions in the body.

11. Choose the correct statements regarding the puberty period.

- i) The male sex glands release testosterone and the female sex glands release estrogen from the ovaries.
 - ii) The hormonal changes results in primary and secondary sexual characteristics of male and female.
- a) i only
 - b) ii only
 - c) Both i and ii**
 - d) Neither i nor ii

Explanation

The male sex glands, testes release the testosterone and the female sex gland the ovaries release the estrogen in puberty period. These result in changes in the primary and secondary sexual characteristics of the male and female.

12. Which of these changes are not related to the puberty transformation of the human body?

- a) Change in body size and proportion.

b) Changes in socioeconomic status.

- c) Development of primary sex characteristics.
- d) Development of secondary sex characteristics.

Explanation

Four important changes that occur during puberty transform the body of a child into that of an adult. These changes are: Changes in body size, Changes in body proportion, Development of primary sex characteristics, and Development of secondary sex characteristics.

13. What is the first and major change in human body during the puberty period?

a) Increase in height and weight.

- b) Voice changes
- c) Intellectual thinking
- d) Personal activities

Explanation

The first major change at the time of puberty is growth which is the increase in body height and weight.

14. Choose the correct statements.

- i) The physical growth begins at the age of 10 to 12 and ends around 17 to 19 in girls.
- ii) Boys physical growth starts at the age of 12 to 13 and ends at 19 to 20.
- iii) Both boys and girls add around 23cm to 26 cm during the adolescence period.

- a) i only
- b) ii only
- c) iii only
- d) All the above**

Explanation

The physical growth usually begins at the age of 10 to 12 in girls and 12 to 13 in boys. It is almost complete at around 17 to 19 in girls and 19 to 20 in boys. During adolescence both boys and girls add around 23 cm to 26 cm in the height.

15. Assertion (A): The average weight gain during the adolescence period is about 17 to 19 kilogram.

Reasoning (R): During the adolescent period fat increase is seen in girls and muscle increase in boys.

- a) Both A and R is True and R is the correct explanation of A.**
- b) Both A and R is True but R is not the correct explanation of A.
- c) A is True but R is False.
- d) Both A and R is False.

Explanation

In addition to height, they also experience significant increase in weight. But increase in weight is influenced by various factors like diet, exercise and life style. The average weight gain during this period is about 17 kg to 19 kg. During this period, increase in fat is seen in girls in contrast to muscle development in boys.

16. Which of these small body areas grow proportionately big during puberty period?

- a) Bones
- b) Feet and hands**
- c) Eyes
- d) Neck

Explanation

Certain body areas which are small proportionately grow big. This can be seen in feet and hands. During childhood, legs grow proportionately more than the trunk. But at the time of puberty trunk also lengthens. Also, trunk broadens at the hip and shoulder thus giving the adult proportion to the body.

17. Which of these are true regarding the puberty period?

- i) At the time of puberty the reproductive organs of boys and girls become fully functional.
 - ii) The size and the length of the reproductive organs of the boys is increased.
 - iii) The female reproductive organ also grows the size of the uterus and the weight of the ovaries increase during this time.
- a) i only
 - b) ii only
 - c) iii only
 - d) All the above**

Explanation

Reproductive organs of boys and girls become fully functional at the time of puberty. In boys, testes grow larger followed by that length and size of the reproductive organ increase. Similarly, female reproductive organ also grows during puberty. Thus, the size of the uterus and the weight of the ovaries increase during this time.

18. Which of these are called as the primary sex organs of human?

- a) Testes of male
- b) Ovaries of female
- c) Estrogen and testosterone
- d) Both a and b**

Explanation

Testes and ovaries are called primary sex organs of the male and female respectively.

19. Choose the Incorrect statements.

- i) Primary sex characteristics are the physical features that distinguishes male from female.
- ii) The secondary sex characters are regulated by the hormones of male and female.

a) i only

b) ii only

c) Both i and ii

d) Neither i nor ii

Explanation

Secondary sex characteristics are the physical features which distinguish male from female. After the progression of puberty, boys and girls become dissimilar in appearance. The secondary sex characters are regulated by the hormones the testosterone or androgen secreted by the testes of the males and estrogen secreted by the ovaries of the females.

20. What are the growth factors in male due to the androgen hormones?

a) Larynx growth

b) Skeletal size and body distribution

c) Muscle development

d) All the above

Explanation

Androgens cause the growth of the larynx, muscle development, skeletal size and distribution of body and pubic hair, and stimulation of sweat glands.

21. Assertion (A): The female sex hormones are estrogen and progesterone.

Reasoning (R): Body fat distribution, development in breast and external genitalia and pubic and axillary hairs are due to secretion of estrogen.

a) Both A and R is True and R is the correct explanation of A.

b) Both A and R is True but R is not the correct explanation of A.

c) A is True but R is False.

d) Both A and R is False.

Explanation

Estrogen and progesterone are the female sex hormones. Estrogen stimulates the development of the breast, the external genitalia, pubic and axillary hairs, and the distribution of body fat.

22. Which of the following are the secondary sex characteristics of boys?

a) Skin becomes coarse and the pores in the skin enlarge.

b) The strength of the muscle increases and gives shape to arms, legs and shoulders.

c) Voice changes occur and the voice becomes husky, pitch drops and the volume increases.

d) All the above

Explanation

The following are the secondary sex characteristics of boys.

Hair: Immediately after the development of primary sex characteristics, pubic hair appears followed by axillary and facial hair.

Skin: The skin becomes coarse and the pores in the skin enlarge.

Glands: The oil producing glands in the skin enlarge and due to this acne may appear on the faces.

Muscle: The strength of the muscle increases and it gives shape to arms, legs and shoulders.

Voice: During this period voice changes occur and the voice becomes husky. Then its pitch drops and the volume increases.

23. Which of these glands are very active during the adolescence period?

- a) Sweat glands
- b) Sebaceous glands
- c) Oil glands
- d) All the above**

Explanation

The secretions of sweat and sebaceous or subcutaneous glands (Oil glands) are very active during adolescence. Many adolescent boys and girls get pimples on face because of increased activity of these glands in the skin. Owing to extra secretions sometimes a distinctive odor is also produced from the bodies.

24. Choose the Incorrect statements.

- i) The Adam's apple throat is due to the growing voice box in boys.
 - ii) The growth of the larynx is larger in girls than that of boys at puberty.
 - iii) In girls larynx is hardly visible from outside and the voice becomes high pitched.
- a) i only
 - b) ii only**
 - c) iii only
 - d) All the above

Explanation

At puberty, the growth of the larynx is larger in boys than that of girls. The growing voice box in boys can be seen as a protruding part of the throat called Adam's apple, so that the voice becomes deep and harsh. This is caused mainly by male hormone (regulatory chemicals) during adolescence. As a result of this, muscles (chords) attached to the cartilage get loosened and thickened. When air passes through these loosened and thickened chords a hoarse sound is produced. In girls larynx is hardly visible from outside because of its small size and the voice becomes high pitched.

25. Which of these is not secondary sex characteristic of a girl?

- a) Fatty and subcutaneous tissues development.
- b) Shoulder broadens.**
- c) Shrill voice

d) Breasts development.

Explanation

Secondary sex characteristics in boys and girls

Girls	Boys
Height and weight increase.	Height and weight increase.
Fatty and subcutaneous tissues develop.	Muscles develop.
Hip broadens.	Shoulder broadens.
Hair grows in arm pits and pubic area.	Hair grows in the arm pits and pubic area, and facial hair also appears.
Voice becomes shrill.	Voice break takes place due to lengthening of vocal cord and enlarging of larynx.
Breast develops.	Size of the penis increases.

26. From which of these glands the primary hormones are secreted?

a) Pituitary

b) Thyroid

c) Adrenal

d) Pineal

Explanation

The primary hormones that regulate reproduction are the steroids such as androgens, estrogens and progesterone which have masculinizing, feminizing and gestational effects respectively. These hormones are secreted from the glands which are regulated by the anterior pituitary (adenohypophysis).

27. Choose the Incorrect statements.

i) The reproductive behavior and reproduction are mainly under the control of LH and FSH in both male and female.

ii) LH stimulates the testes to produce androgens to produce active sperms.

iii) In man sperm production starts at sexual puberty and may end at the age of 50 to 55.

a) i only

b) ii only

c) iii only

d) All the above

Explanation

In male and female, reproductive behavior and reproduction are mainly under the control of LH (Luteinizing Hormone) and FSH (Follicle Stimulating Hormone). LH stimulates the testes to produce androgens, the male sex hormone. Sperms are then actively produced. In man sperm production starts at sexual puberty and may continue throughout his life.

28. Assertion (A): FSH in female influences the development of Graafian follicle and estrogen secretion.

Reasoning (R): In male FSH is necessary for the development of seminiferous tubules and spermatogenesis.

- a) Both A and R is True and R is the correct explanation of A.
- b) Both A and R is True but R is not the correct explanation of A.
- c) A is True but R is False.
- d) Both A and R is False.

Explanation

Follicle Stimulating Hormone (FSH): FSH in the female influences the development of the Graafian follicle and secretion of estrogens. In the male it is necessary for the development of seminiferous tubules, and for spermatogenesis.

29. Choose the correct statements.

- i) Luteinizing hormone is necessary for ovulation and for the final maturation of Graafian follicle.
- ii) Estrogen is a single hormone.

- a) i only
- b) ii only
- c) Both i and ii
- d) Neither i nor ii

Explanation

Luteinizing Hormone (LH): In the female, it is the hormone necessary for ovulation, and the secretion of the luteal hormone progesterone, and for the final maturation of the Graafian follicle. Estrogen is not a single hormone but a collection of related steroid hormones.

30. Which of these is referred as the luteinizing hormone in male?

- a) Follicle Stimulating Hormone
- b) Luteal progesterone
- c) Interstitial Cell Stimulating Hormone
- d) Graafian follicle

Explanation

In the male the Luteinizing Hormone stimulates the interstitial (Leydig) cells of testes and the secretion of testosterone, and is referred to as the Interstitial Cell Stimulating Hormone (ICSH).

31. Which of this hormone secretes milk during lactation period of female?

- a) **Prolactin**
- b) Estrogen
- c) Androgen
- d) Testosterone

Explanation

Prolactin (PRL) or Lactogenic Hormone: The main function of this hormone is milk secretion during lactation.

32. What are the functions of the oxytocin hormone?

- a) Milk expulsion
- b) Milk secretion
- c) Muscle contraction of uterus during child birth.
- d) **Both a and c**

Explanation

Oxytocin Hormone: Oxytocin causes expulsion of milk from the breast and it is also involved in the contraction of smooth muscles of uterus during child birth.

33. Which of these is resulted in the reproductive phase of an individual's life?

- a) Hormonal changes.
- b) Primary sex characteristics development.
- c) **Production of gametes.**
- d) Identification of secondary sex characteristics.

Explanation

Reproduction is more important for the continuation of human race. The phase in an individual's life during which there is production of gametes is called reproductive phase.

34. Choose the incorrect statements.

- i) The reproductive phase of female begins at the time of puberty.
 - ii) The reproductive phase of a male starts at the age of 13 to life long.
 - iii) The reproductive age is not varied from person to person.
- a) i only
 - b) ii only
 - c) **iii only**
 - d) None of the above

Explanation

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, and in males, it is from the age of 13 to life long. The reproductive age may vary from person to person.

35. Which is not a reproductive phase in the female life?

- a) Menarche
- b) Menopause**
- c) Ovulation
- d) Pregnancy

Explanation

The following are the reproductive phases in the life of a female. Menarche, Ovulation and Pregnancy.

36. Which is termed as menarche in female adolescent period?

- a) First menstrual flow**
- b) Matured Ovum
- c) Unfertilized eggs
- d) Progesterone secretion

Explanation

The first menstrual flow begins at puberty and is termed menarche. The ova begin to mature with the onset of puberty. It is the beginning of adolescence, during which mental and emotional maturation occurs and physical growth becomes pronounced.

37. Which of these causes the blood flow during the mensuration period?

- a) Fertilized ovum
- b) Thin lining of the uterus.
- c) Unfertilized ovum and degenerated corpus luteum.**
- d) Secreted progesterone and estrogen.

Explanation

Menstruation: If the ovum is not fertilized the corpus luteum begins to degenerate and the production of hormones progesterone and estrogen ceases. The unfertilized egg and the thickened lining of the uterus along with its blood vessels are shed off. This causes bleeding in woman's reproductive tract which is called menstruation.

38. Which of the statements are not true regarding the menopause?

- a) Stoppage of mensuration cycle is termed as Menopause.
- b) Women at the age of 45 to 50 years' experience the menopause.
- c) Menopause improves the physical and mental fitness of women.**
- d) Menopause is the end of the reproductive phase of women's life.

Explanation

Menopause: Menopause marks the end of the reproductive phase of a woman's life. At 45 to 50 years of age, the menstrual cycle stops. Stoppage of menstruation is termed as 'menopause'.

39. What are the psychological symptoms of menopause in women?

- a) Anxiety
- b) Loss of concentration and fatigue
- c) Irritability
- d) All the above**

Explanation

During menopause psychological symptoms such as anxiety, irritability, fatigue and loss of concentration may occur. Menopause may be induced by surgical removal of the ovaries, or by pelvic irradiation in a woman of any age.

40. Define Ovulation.

- a) Changes in secondary sex characteristics of girls.
- b) Physical growth and maturity of women.
- c) One mature ovum released from the ovaries into the oviduct once in every 28 days.**
- d) None of the above

Explanation

Usually one mature ovum (or egg) is released from one of the ovaries into the oviduct once in every 28 days. This is called ovulation.

41. After how many days of ovulation menstruation cycle occurs for healthy women?

- a) 28 days
- b) 14 days**
- c) 5 days
- d) 30 days

Explanation

Menstruation usually occurs 14 days after ovulation and usually lasts for about 3 to 5 days.

42. Which of these controls the menstrual cycle of women?

- a) Physical fitness
- b) Diet
- c) Hormones**
- d) Blood circulation

Explanation

The cycle of menstruation is repeated again and again in women after every 28 days. The menstrual cycle is controlled by hormones.

43. In which of these cases the menstruation cycle stops?

- a) Excess weight gain
- b) Eating disorder
- c) Stress and low body weight
- d) All the above**

Explanation

Menstruation stops temporarily when the ovum gets fertilized and the women get pregnant. This is because, in this case the thick and soft lining of the uterus containing lot of blood vessels is needed for the growth and development of the fertilized ovum to form a baby. Menstruation restarts after the birth of the baby. Menstruation also stops due to nutritional deficiencies, low body weight, stress, eating disorder, excessive weight gain etc.

44. According to WHO which of these are considered for a good reproductive health of an adolescent?

- a) Behavioral
- b) Emotional
- c) Physical and social aspects
- d) All the above

Explanation

The physical and mental well-being of an individual is regarded as an individual's health. The World Health Organization (WHO) has defined the reproductive health as the total well-being of behavioral, emotional, physical and social aspects of adolescence. To keep the body healthy, every human being at any age, needs to have a diet, exercise and personal hygiene.

45. What are the healthy measures to be taken by the adolescent girls and boys?

- a) Cleanliness and Personal hygiene
- b) Balanced diet
- c) Physical exercise
- d) All the above

Explanation

The following are some of the measures that girls and boys need to take. Cleanliness, Physical exercise, Personal hygiene, Balanced diet.

46. What are the effects of physical exercises?

- a) To keep the body fit
- b) Better health
- c) Sound sleep
- d) All the above

Explanation

Physical Exercise: Walking and playing in fresh air keeps the body fit and healthy. All young boys and girls should take a walk, exercise and play outdoor games. Physical activity leads to the conditions of better health, sound sleep and thereby mental peace. Mental peace promotes happiness in day to day existence.

47. Assertion (A): A Balanced diet with proper calories and nutrients is needed during the adolescent period.

Reasoning (R): Adolescence stage involves rapid growth and development for proper physical activity.

- a) Both A and R is True and R is the correct explanation of A.
- b) Both A and R is True but R is not the correct explanation of A.
- c) A is True but R is False.
- d) Both A and R is False.

Explanation

Adolescence is a stage of rapid growth and development. Hence a diet with proper calories and other nutrients is needed for proper growth and physical activity.

48. Choose the correct statements.

- i) Balance diet is very much important during adolescence period.
 - ii) Balance diet includes proteins, carbohydrates, fats and vitamins in required proportions.
 - iii) Indian meal of roti/rice, milk, fruits and vegetables forms a balanced food.
- a) i only
 - b) ii only
 - c) iii only
 - d) All the above

Explanation

Balanced diet is very much important during adolescence. Balanced diet includes proteins, carbohydrates, fats and vitamins in requisite proportions. Our Indian meal of roti / rice, dal (pulses), milk, fruits and vegetables forms a balanced food.

49. What are the effects of nutritional deficiencies during the adolescent period?

- a) Retard physical growth
- b) Impair intellectual development
- c) Delay sexual maturation
- d) All the above

Explanation

The nutritional deficiencies during this period not only retard the physical growth but also impair the intellectual development and may also delay sexual maturation. A very good amount of proteins and carbohydrates is necessary during this growth period.

50. State the major reason for increased need of minerals during adolescence?

- a) Increase in skeletal mass
- b) Increase in blood volume
- c) Increased immunity
- d) Both a and b

Explanation

Since there is an increase in skeletal mass and blood volume during adolescence, the body needs calcium, phosphorus and iron.

51. Which of this disease is mainly prevented by intake of calcium?

- a) Cancer
- b) Osteoporosis**
- c) Blood pressure
- d) Cardiac diseases

Explanation

Calcium: Calcium intake needs to be increased to prevent osteoporosis in later life. It is present in milk and milk products or other equivalents.

52. Which of these mineral prevents thyroid related disease?

- a) Iodine**
- b) Iron
- c) Magnesium
- d) Chlorine

Explanation

Iodine: It helps to prevent thyroid gland related diseases.

53. Choose the Incorrect statements.

- i) Iron rich foods build immunity and lack of iron diet results in Low blood pressure levels.
- ii) Iron deficiency in adolescent boys occurs due to muscle spurts.
- iii) Women must take iron rich foods regularly to make up for the loss of blood during mensuration cycle.

- a) i only**
- b) ii only
- c) iii only
- d) None of the above

Explanation

Iron: Iron builds blood and iron-rich foods such as green leafy vegetables, jaggery, meat, dates, fish, chicken, citrus, Indian gooseberry (Nelli) and whole pulses are good for adolescents. Lack of iron in the diet results in anemia. To make up for the loss of iron, adolescents need to have a diet rich in iron. In boys, iron deficiency occurs due to muscle spurt whereas in girls it occurs due to menstruation in addition to the muscular growth. Women should take in more iron in their diet regularly to make up for the loss of blood during menstruation.

54. Which of these to be given special attention for a growing adolescence?

- a) Diet

- b) Personal Hygiene
- c) Exercise
- d) All the above**

Explanation

During adolescence, growing children need special attention towards diet, exercise and personal hygiene.

55. Which of these to be avoided by an adolescent for maintaining personal hygiene?

- a) Avoid coughing or sneezing around food and in public places.
- b) Avoid self-medication.
- c) Avoid touching face and mouth while preparing food.
- d) All the above**

Explanation

Personal hygiene is a clear indicator of man's personality. Personal hygiene starts from the hair tip and ends down at the toes. Personal hygiene habits for the adolescence are as follows. Shower or bath daily. Always wash your hands before and after meals. Keep fingernails clean and dipped. Wash your teeth and mouth before and after each meal. Avoid touching your face, nose or mouth while preparing food. Avoid coughing or sneezing around food and close your mouth by using hand kerchief while you cough in public places. If you want to taste the food, use a clean spoon. Change your clothes regularly and wash them cleanly, especially undergarments. Do not defecate in open field. Use clean toilets for defecation. If you are not well, avoid self-medication consult a doctor.