ADOLESCENCE

TEACHING TASK (107 – 110)

Single Correct Answer MCQs

1.Reproductive age in women starts when their A. Menstruation starts

Key: A

Solution: Reproductive age in women begins with the onset of menstruation (menarche), which typically occurs during puberty, marking the ability to conceive. Breast development, body weight, or height increases are not direct indicators of reproductive age.

2. The sex of a child is determined by B. The presence of a 'Y' chromosome in sperm

Key: B

Solution: The sex of a child is determined by the sperm's sex chromosome. A sperm carrying a Y chromosome results in a male (XY), while a sperm carrying an X chromosome results in a female (XX). The egg always contributes an X chromosome.

3. Menstrual cycle in women is controlled by C. Hormones

Key: C

Solution: The menstrual cycle is regulated by hormones such as estrogen, progesterone, follicle-stimulating hormone (FSH), and luteinizing hormone (LH), produced by the pituitary gland and ovaries. Nutrition and height do not directly control the cycle.

4. The changes occurring in body and mind during adolescence are a natural part of B. Puberty

Key: B

Solution: Puberty is the phase during adolescence when physical and mental changes occur, leading to sexual maturity. Adolescence is a broader term, while "enlarging" and "growing" are vague and not specific to this context.

5. Secondary sexual characters in girls are produced by the female sex hormone called B. Oestrogen

Key: B

Solution: Estrogen (oestrogen) is responsible for secondary sexual characteristics in girls, such as breast development and widening of hips. Progesterone supports pregnancy, and testosterone is a male hormone. Option D (B & C) is incorrect as progesterone is not primarily responsible.

6. The combination of 'XY' sex chromosomes in zygote will be B. Boy

Key: B

Solution: A zygote with XY chromosomes develops into a male (boy), as the Y chromosome carries genes for male development.

7. The right meal for adolescents consists of B. Chapati, dal, vegetables

Key: B

Solution: Adolescents require a balanced diet with carbohydrates, proteins, and vitamins for healthy growth. Chapati (carbohydrates), dal (proteins), and vegetables (vitamins/minerals) form a nutritious meal, unlike the other options, which are high in unhealthy fats or sugars.

8. Adolescents should be careful about what they eat because B. Proper diet is needed for the rapid growth taking place in their body

Key: B

Solution: Adolescence is a period of rapid growth and development, requiring a balanced diet to support physical and mental growth. While brain development (A) is important, the primary reason is the overall rapid growth of the body.

9. Which of the following hormone prepares our body for action in emergency situations? D. Adrenaline

Key: D

Solution: Adrenaline (epinephrine) is released by the adrenal glands during emergencies, triggering the "fight or flight" response, increasing heart rate, blood pressure, and energy availability.

More Than One Answer MCQs

10. Pimples and acne are formed due to the increased activity of D. 2 & 4 (Sebaceous glands & Sweat glands)

Key: D

Solution: Pimples and acne result from increased activity of sebaceous glands (producing excess oil) and sweat glands (contributing to clogged pores). Adrenal and thyroid glands are not directly involved in acne formation.

11. Which of the following can lead to menstruation in a 21-year-old woman during ovulation? C. A and C (Sperms available for fertilization, Sperms are not available for fertilization)

Key: C

Solution: Menstruation occurs if ovulation does not result in fertilization (sperms not available, C). However, if sperms are available and fertilization occurs (A), menstruation may still occur in some cases due to implantation failure or other factors. Blocked oviducts (B, D) prevent fertilization but do not directly trigger menstruation.

12. Following are the events of the menstrual cycle in a correct sequence B. ii, iv, i, iii (Uterus wall thickened with blood vessels, Ovary discharges the ovum, Ovum dies within 24 hours after ovulation, Uterus walls break down)

Key: B

Solution: The menstrual cycle sequence is:

Proliferative phase: Uterus wall thickens (ii).

Ovulation: Ovary releases ovum (iv).

Post-ovulation: Ovum dies if not fertilized (i).

Menstruation: Uterus wall breaks down if no pregnancy (iii).

Assertion and Reason

13. A. Thyroid is called the gland of fight, fright, and flight. R. The hormone thyroxine helps the body to combat against stress and emergency conditions. D. A & R are false

Key: D

Solution: The thyroid gland produces thyroxine, which regulates metabolism, not the "fight, fright, flight" response (Assertion is false). The adrenal gland, via adrenaline, handles stress/emergency responses, so the Reason is also false in this context.

14. A. Puberty is the stage at which an individual becomes sexually matured. R. In girls, puberty occurs at younger stage than boys. A. A & R are true, R explains A

Key: A

Solution: Puberty is when sexual maturity is reached (A is true). Girls typically enter puberty earlier (around 10–11 years) than boys (around 11–12 years), so R is true and explains why puberty timing differs.

Match the Following

15. Match the phases of the menstrual cycle A. 1-d, 2-a, 3-b, 4-c (Menstrual phase: 1–5 days, Proliferative phase: 6–13 days, Ovulatory phase: 14th day, Secretory phase: 15–28 days)

Key: A

Solution:

Menstrual phase: Days 1–5 (d).

Proliferative phase: Days 6–13, follicle development (a).

Ovulatory phase: Day 14, ovum release (b).

Secretory phase: Days 15–28, uterus prepares for pregnancy (c).

16. Match the terms B. 1-c, 2-d, 3-a, 4-b (Pituitary gland: Master gland, Adam's apple: Larynx, Adolescence age: 13–19 years, Legal age for marriage for girls: 18 years)

Key: B

Solution:

Pituitary gland: Master gland, controls other glands (c).

Adam's apple: Prominent larynx in males (d).

Adolescence age: Typically 13–19 years (a).

Legal age for marriage for girls: 18 years (b, assuming context of many countries).

Comprehensive Questions

17. i. Hormones are released by B. Endocrine glands

Key:

B **Solution**: Hormones are secreted by endocrine glands, which release them directly into the bloodstream, unlike exocrine glands, which use ducts.

ii. Hormones are poured directly releasing into A. Circulatory system

Key: A

Solution: Hormones are released into the bloodstream (circulatory system) to reach target sites, not the respiratory, digestive, or nervous systems.

iii. Insulin is a hormone released by gland C. Pancreas

Key: C

Solution: Insulin, which regulates blood sugar, is produced by the pancreas, not the adrenal, thyroid, or liver.

iv. Hormone acts on D. Specific tissues

Key: D

Solution: Hormones act on specific tissues or organs (target sites) with receptors for that hormone, not all cells, tissues, or organs.

LEARNER'S TASK (Page 110 -113)

Single Correct Answer MCQs

1. The legal age for the marriage of boys in our country is C. 21 years

Key: C

Solution: In many countries (e.g., India), the legal marriage age for boys is 21 years.

2. The onset of puberty is controlled by C. Hormones

Key: C

Solution: Puberty is triggered by hormones like FSH, LH, estrogen, and testosterone, not nutrition or height alone.

3. Sexual maturity is reached at B. Puberty

Key: B

Solution: Puberty is the stage when sexual maturity is achieved, marked by reproductive capability.

4. Initially girls grow _____ than in boys C. Faster than

Key: C

Solution: Girls typically experience growth spurts earlier and faster than boys during early puberty.

5. Each normal body cell in humans contains ____ pairs of chromosomes C. 23 pairs

Key: C

Solution: Human somatic cells contain 23 pairs (46 total) chromosomes.

6. X and Y chromosomes are called ____ chromosomes D. None

Key: D

Solution: X and Y chromosomes are called sex chromosomes or allosomes, not female/male chromosomes or autosomes.

7. Secondary sexual characters in boys are produced by the male sex hormone called A. Testosterone

Key: A

Solution: Testosterone drives secondary sexual characteristics in boys, such as facial hair and voice deepening.

8. The stoppage of menstruation in women is called B. Menopause

Key: B

Solution: Menopause is the cessation of menstruation, typically occurring around age 45–50.

9. The first occurrence of menstruation at puberty is called A. Menarche

Key: A

Solution: Menarche is the first menstrual period, marking the onset of puberty in girls.

10. Menstrual cycle is a period of about --- days D. 28–30 days

Key: D

Solution: The average menstrual cycle lasts 28–30 days, though it can vary slightly.

11. The combination of 'XX' sex chromosomes in zygote will be A. Girl

Key: A

Solution: A zygote with XX chromosomes develops into a female (girl).

12. The age of full physical development is called A. Adult

Key: A

Solution: Adulthood marks the completion of physical development, typically post-adolescence.

13. A young human being below the age of full physical development is called C. Puberty

Key: C

Solution: A young human before full physical development is in the puberty stage, transitioning to adulthood.

More Than One Answer MCQs

1. Which of the following statements are correct concerning the menstrual cycle? A. (i) and (ii) (An ovum is developed and released during the menstrual cycle, The uterine lining becomes very thin immediately after menstruation)

Key: A

Solution:

(i) True: An ovum is developed and released during ovulation in the menstrual cycle.

(ii) True: The uterine lining sheds during menstruation, becoming thin afterward.

(iii) False: The fertile period is around ovulation (mid-cycle, ~day 14), not immediately after menstruation.

2. Which of the following will occur in females at puberty? A. i, ii & iii (Ovulation, Enlargement of breasts, Broadening of breasts)

Key: A

Solution: At puberty, females experience ovulation (i), breast enlargement (ii), and broadening of hips (not breasts, but assuming a typo for hips) (iii). All are characteristic changes.

Assertion and Reason

3. A. The human beings can reproduce only after a certain age. R. Their reproductive system starts working only after a certain age. A. A & R are true, R explains A

Key: A

Solution: Humans reproduce after puberty when the reproductive system matures (A and R are true). The reason explains why reproduction is age-dependent.

4. A. Young human beings below the age of full physical development is called a child. R. A matured human being who is fully grown and developed is called an adult. B. A & R are true, R doesn't explain A

Key: B

Solution: A is true (young humans are called children). R is true (matured humans are adults), but R describes adulthood, not why young humans are called children.

5. A. Adolescence usually begins around the age of 10 or 11. R. It lasts up to the age of 45–50 years. C. A is true, R is false

Key: C

Solution: Adolescence begins around 10–11 years (A is true), but it typically ends by 19 years, not 45–50 (R is false).

Match the Following

6. Match the terms B. 1-c, 2-d, 3-a, 4-b (Testosterone: Male hormone, Progesterone: Female hormone, 45–50 years: Menopause, 28–30 days: Menstrual cycle)

Key: B

Solution:

Testosterone: Male hormone (c).

Progesterone: Female hormone, supports pregnancy (d).

45–50 years: Age of menopause (a).

28–30 days: Menstrual cycle duration (b).

7. Match the terms D. 1-c, 2-b, 3-d, 4-a (Menarche: First menstruation, Endocrine gland: Pituitary, Testes: Sperm, Female hormone: Estrogen)

Key: D

Solution:

Menarche: First menstruation (c).

Endocrine gland: Pituitary, the master gland (b).

Testes: Produce sperm (d).

Female hormone: Estrogen (a).

Comprehensive Questions (Sex Determination)

8. i. Male chromosomes are b. XY

Key: b

Solution: Males have one X and one Y chromosome (XY).

ii. Chromosomes whose number morphology do not differ in males and females a. Autosomes

Key: a

Solution: Autosomes (22 pairs) are identical in males and females, unlike sex chromosomes (allosomes).

iii. If Y chromosome fertilizes the ovum result will be c. Boy

Key: c

Solution: A Y chromosome from sperm results in an XY zygote, developing into a boy.

iv. Number of chromosomes in human c. 46

Key: c

Solution: Humans have 46 chromosomes (23 pairs) in somatic cells.

ARCHIVES

Single Answer Questions

1. Secreted materials from ductless glands are called A. Hormones

Key: A

Solution: Ductless glands (endocrine glands) secrete hormones directly into the bloodstream.

2. Which of the following pairs of hormones controls the onset of puberty in boys and girls respectively C. Both (Testosterone, Progesterone)

Key: C

Solution: Testosterone triggers puberty in boys, and progesterone (along with estrogen) plays a role in girls' puberty, though estrogen is more primary.

3. Ductless glands are also known as B. Endocrine glands

Key: B

Solution: Ductless glands are endocrine glands, releasing hormones into the blood, unlike exocrine glands (e.g., salivary glands).

4. Read the following paragraph and choose the correct sequence D. Hormones, endocrine, testosterone, estrogen, pituitary

Key: D

Solution: The changes at adolescence are controlled by hormones from endocrine glands. Testosterone is released by testes in boys, estrogen by ovaries in girls, under the control of the pituitary gland.