

## 6.ADOLESCENCE

### SOLUTIONS

#### TEACHING TASK

#### SINGLE CORRET ANSWER MCQ's

1. Reproductive age in women starts when their
- A. Menstruation starts
  - B. Breasts start developing
  - C. Body weight
  - D. Height increases

**Answer: A**

Solution: "Reproductive age in women begins when menstruation starts, indicating the onset of puberty.

2. The sex of child is determined by
- A. The presence of an 'x' chromosome in egg.
  - B. The presence of a 'y' chromosome in sperm.
  - C. the age of father and mother
  - D. The length of mother's pregnancy

**Answer: B**

Solution: "The Y chromosome in the sperm determines the sex of the child. If a Y sperm fertilizes the egg (which always has X), the zygote will be male (XY).

3. Menstrual cycle in women is controlled by
- A. Nutrition
  - B. Height
  - C. Hormones
  - D. All

**Answer: C**

Solution: "The menstrual cycle is regulated by hormones like estrogen, progesterone, LH, and FSH.

4. The changes occurring in body and mind during adolescence are a natural part of
- A. Adolescent
  - B. puberty
  - C. enlarging
  - D. Growing

**Answer: B**

Solution: The physical and emotional changes during adolescence are a natural part of puberty.

5. Secondary sexual characters in girls are produced by the female sex hormone called
- A. Testosterone
  - B. Oestrogen
  - C. Progesterone
  - D. B&C

**Answer: B**

Solution: "Oestrogen is the female sex hormone responsible for the development of secondary sexual characters in girls.

6. The combination of 'xy' sex chromosomes in zygote will be ---
- A. Girl
  - B. Boy
  - C. Both
  - D. None

**Answer: B**

Solution: "A zygote with XY chromosomes will develop into a boy.

7. 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**

Solution: "A healthy meal for adolescents includes chapati, dal, and veget nutritious and balanced..

8. Adolescents should be careful about what they eat because :
- proper diet develops their brains.
  - proper diet is needed for the rapid growth taking place in their body.
  - adolescents feel hungry all the time.
  - taste buds are well developed in teenagers.

**Answer: B**

Solution: "Adolescents require a proper diet because of rapid growth taking place during this period."

9. Which of the following hormone prepares our body for action in emergency situations?
- his blood pressure was high
  - his heart beat was high
  - his blood sugar was high
  - adrenaline.

**Answer: D**

Solution: "The hormone adrenaline prepares the body for emergency ("fight or flight") situations by increasing heart rate, blood pressure, and energy availability.

**More than one answer**

" This section contains multiple choice questions. Each question has 4 choices (A), (B), (C), (D), out of which **ONE or MORE** is correct. Choose the correct options

10. Pimples and acne are formed due to the increased activity of
- Adrenal glands
  - sebaceous glands
  - Thyroid glands
  - Sweat glands
- 1 & 2
  - 2 & 3
  - 1 & 3
  - 2 & 4

**Answer: D (2 & 4)**

Solution: "Pimples and acne are caused due to overactivity of sebaceous glands (oil) and sweat glands during puberty.

11. Which of the following can lead to menstruation in a 21 year old woman during ovulation?
- Sperms available for fertilization
  - Oviducts blocked
  - Sperms are not available for fertilisation
  - Oviducts not blocked
- A and B
  - B and D
  - A and C
  - B and D

**Answer: C (A and C)**

Solution: "Menstruation occurs if sperms are not available for fertilization. If the oviducts are blocked, ovum cannot be fertilized either.

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

**Answer: B (ii, iv, i, iii)**

Solution: "Correct sequence: "Uterus wall thickens ?" "Ovum released ?" "Ovum dies if not fertilized ?" "Uterus lining breaks down = menstruation

**Assertion and reason**

" This section contains certain number of questions. Each question contains Statement – 1 (Assertion) and Statement – 2 (Reason). Each question has 4 choices (A), (B), (C) and (D) out of which **ONLY ONE** is correct. Choose the correct option.

B. A&R are true , R doesn't explain A

C. A is true , R is false

D. A& R are false

**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.

**Answer: D**

Solution:“? Assertion is false – Thyroid is not the gland of fight/fright/flight (that's adrenal gland).“? Reason is false – Thyroxine regulates metabolism, not stress.

**14. A.** Puberty is the stage at which an individual becomes sexually matured.

**R.** In girls, puberty occurs at younger stage than boys.

**Answer: A**

Solution:“Puberty marks the start of sexual maturity.“? Girls usually attain puberty earlier than boys.“Reason explains Assertion.

### **Match the following**

“ This section contains Matrix-Match Type questions. Each question contains statements given in two columns which have to be matched. Statements (A, B, C, D) in **Column-I** have to be matched with statements (p, q, r, s) in **Column-II**. The answers to these questions have to be appropriately bubbled as illustrated in the following example.

If the correct matches are A-p,A-s,B-r,B-r,C-p,C-q and D-s,then the correct bubbled 4\*4 matrix should be as follows:

- |            |                       |     |                    |
|------------|-----------------------|-----|--------------------|
| <b>15.</b> | 1. Menstrual phase    | ( ) | a. 6 - 13 days     |
|            | 2.Proliferative phase | ( ) | b. 14 th day       |
|            | 3.Ovulatory phase     | ( ) | c. 15 - 28 days    |
|            | 4 Secretory phase     | ( ) | d. 1 - 5 days      |
|            | A. 1-d,2-a,3-b,4-c    |     | B. 1-c,2-d,3-a,4-b |
|            | C. 1-c,2-a,3-b,4-d    |     | D. 1-d,2-b,3-a,4-c |

**Answer: A**

Solution:

PhaseDays“

- |                     |             |
|---------------------|-------------|
| Menstrual phase     | d. 1-5“     |
| Proliferative phase | a. 6-13     |
| Ovulatory phase     | b. 14th day |
| Secretory phase     | c. 15-28    |

- |            |                                     |     |                    |
|------------|-------------------------------------|-----|--------------------|
| <b>16.</b> | 1.Pituitary gland                   | ( ) | a. 13-19 years     |
|            | 2.Adam's apple                      | ( ) | b. 18 years        |
|            | 3.Adolescence age                   | ( ) | c. Master gland    |
|            | 4. Legal age for marriage for girls | ( ) | d. Laynx           |
|            | A. 1-d,2-c,3-a,4-b                  |     | B. 1-c,2-d,3-a,4-b |
|            | C. 1-c,2-a,3-b,4-d                  |     | D. 1-c,2-b,3-d,4-a |

**Answer: B**

Solution:

- |                 |                 |
|-----------------|-----------------|
| Item            | Match           |
| Pituitary gland | c. Master gland |
| Adam's apple    | d. Larynx“      |

Matches: 1-c, 2-d, 3-a, 4-b““

“ This section contains paragraph. Based upon each paragraph multiple choice questions have to be answered. Each question has 4 choices (A) , (B) ,(C ) and (D) out of which **ONLY ONE** is correct. Choose the correct option.

organisms and also their growth. Hormones are made and secreted by specialised tissues in the body called 'endocrine glands'. The hormones are poured directly into the blood and carried through out the body by the blood circulatory system. The hormones act on 'specific tissues' or 'specific organs' in the body called 'target sites'. A hormone is produced by an endocrine gland in one part of human body but causes a particular effect in another part of the body.

- i. Hormones are released by  
A) Exocrine glands                      B) Endocrine glands  
C) A & B                                  D) None
- ii. Hormones are poured directly releasing into  
A) Circulatory system                      B) Respiratory system  
C) Digestive system                      D) Nervous system
- iii. Insulin is a hormone released by gland  
A) Adrenal                                  B) Thyroid                      C) Pancreas                      D) Liver
- iv. Hormone acts on  
A) Cells                                  B) Tissues                      C) Organs                      D) Specific tissues

- 1.** The legal age for the marriage of boys in our country is  
A. 16 years            B. 18 years   C. 21 years   D. 24 years

**Solution:** In India, the legal minimum age for marriage is 21 years for boys and 18 years for girls. This law helps ensure physical and mental maturity before marriage.

2. The onset of puberty is controlled by  
A. Nutrition                      B. Height      C. Hormones                      D. All

Solution: Puberty is mainly controlled by hormones, but factors like nutrition and genetic influences (such as height) also play a role in its timing.

- 3.** Sexual maturity is reached at  
A. Adolescent B. puberty C. both a&b D. none

**Solution:** Adolescence is the phase during which puberty occurs. Both terms are linked to the development of sexual maturity.

4. Initially girls grow \_\_\_\_ than in boys  
A. Less than                      B.more than                      C.faster than                      D.All

**Answer: C) faster than**

Solution: Girls generally begin puberty earlier than boys, leading to faster growth in the early adolescent years.

5. Each normal body cell in humans contains \_\_\_\_ pairs of chromosomes  
A.21 pairs                      B.22 pairs                      C.23 pairs                      D.24 pairs

**Answer: C) 23 pairs**

Solution: Human body cells (somatic cells) contain 23 pairs of chromosomes, including 22 pairs of autosomes and 1 pair of sex chromosomes (XX or XY).

6. X and Y chromosomes are called \_\_\_\_chromosomes  
A. Female chromosomes                      B.male chromosomes  
C. Autosomes                      D. None

**Answer: D) None**

Solution: X and Y chromosomes are sex chromosomes, not male chromosomes or autosomes. Option D is correct because none of the listed options define it correctly.

7. Secondary sexual charcters in boys are produced by the male sex hormone called  
A. Testosterone                      B. Oestrogen                      C. Progesterone                      D. Aldosterone

**Answer: A) Testosterone**

Solution: Testosterone is the primary male sex hormone responsible for the development of secondary sexual characteristics in boys such as facial hair, voice deepening, and increased muscle mass.

8. The stoppage of menstruation in women is called  
A. Menarche                      B Menopause                      C. A & B                      D. None

**Answer: A) Menarche**

Solution: Menarche is the term for a girl's first menstrual period and marks the onset of reproductive capability.

9. The first occurence of menstruation at puberty is called  
A. Menarche                      B Menopause                      C. A & B                      D. None

**Answer: A) Menarche**

Solution: Menarche is the term for a girl's first menstrual period and marks the onset of reproductive capability.

10. Menstrual cycle is a period of about --- days  
A. 25-30 days                      B.26-30 days                      C.27-30 days                      D.28- 30 days

**Answer: D) 28-30 days**

Solution: A typical menstrual cycle lasts around 28 to 30 days, although it may vary slightly for different individuals.

11. The combination of 'xx ' sex chromosomes in zygote will be  
A. Girl                      B. Boy                      C. Both                      D. None

**Answer: A) Girl**

Solution: The XX combination of sex chromosomes determines a female child. Males have the XY combination. The father's sperm determines the sex of the child."

12. The age of full physical development is called  
A. Adult                      B. Child                      C. Adolescent                      D. All

**Answer: A) Adult**

Solution: A person is considered an adult after reaching full physical and sexual maturity, typically after adolescence.

- 13.** A young human being below the age of full physical development is called  
A. Adult                      B. Childhood                      C. Puberty                      D. None

**Answer: B) Childhood**

Solution: A human being who has not yet reached puberty or adolescence is considered to be in the childhood stage.

**More Than One Answer**

" This section contains multiple choice questions. Each question has 4 choices (A), (B), (C), (D), out of which **ONE or MORE** is correct. Choose the correct options

- 1.** Which of the following statements are correct concerning the menstrual cycle ?  
(i) An ovum is developed and released during the menstrual cycle.  
(ii) The uterine lining becomes very thin immediately after mensuration.  
(iii) The fertile period is the period immediately after mensuration.  
A. (i) and (ii)    B. (i) and (iii)    C. (ii) and (iii)    D. (i), (ii) and (iii).

**Answer: A**

Solution: (i) An ovum is developed and released during the menstrual cycle – (ii) The uterine lining becomes very thin immediately after menstruation – (iii) The fertile period is the period immediately after menstruation – Only (i) and (ii) are correct.

- 2.** Which of the following will occur in females at puberty ?  
(i) Ovulation                      (ii) Enlargement of breasts                      (iii) Broadening of breasts  
A. i, ii & iii                      B. ii & iii                      C. i & iii                      D. None

**Answer: A**

Solution: (i) Ovulation – (ii) Enlargement of breasts – (iii) Broadening of hips – All statements are correct.

**Assertion and reason**

" This section contains certain number of questions. Each question contains Statement – 1 (Assertion) and Statement – 2 (Reason). Each question has 4 choices (A), (B), (C) and (D) out of which **ONLY ONE** is correct. Choose the correct option.

- A. A & R are true, R explains                      B. A & R are true, R doesn't explain A  
C. A is true, R is false                      D. A & R are false

- 3. A.** The human beings can reproduce only after a certain age.

**Answer: A**

Solution: Both assertion and reason are true, and the reason correctly explains the assertion.

- 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.

**Answer: A**

Solution: Both statements are true and the reason explains the assertion.

- 5. A.** Adolescence usually begins around the age of 10 or 11.  
**R.** It lasts up to the age of 45 - 50 years.

**Answer: C**

Solution: Assertion is true (adolescence begins at 10–11), but reason is false (adoles-

cence ends around 18–19, not 45–50 years).““

### **Matching the following :**

“ This section contains Matrix-Match Type questions. Each question contains statements given in two columns which have to be matched. Statements (A, B, C, D) in **Column-I** have to be matched with statements (p, q, r, s) in **Column-II**. The answers to these questions have to be appropriately bubbled as illustrated in the following example. If the correct matches are A-p,A-s,B-r,B-r,C-p,C-q and D-s,then the correct bubbled 4\*4 matrix should be as follows:

- 6.**
- |                    |                    |                    |
|--------------------|--------------------|--------------------|
| 1. Testosterone    | ( )                | a. Menapausse      |
| 2. Progesterone    | ( )                | b. Menstrual cycle |
| 3. 45 - 50 years   | ( )                | c. Male hormone    |
| 4. 28 - 30 days    | ( )                | d. Female hormone  |
| A. 1-d,2-c,3-b,4-a | B. 1-c,2-d,3-a,4-b |                    |
| C. 1-c,2-a,3-b,4-d | D. 1-d,2-b,3-a,4-c |                    |

**Answer: B**

Solution:““1 ? c““2 ? d““3 ? a““4 ? b

- 7.**
- |                    |                    |                       |
|--------------------|--------------------|-----------------------|
| 1.Menarch          | ( )                | a. Estrogen           |
| 2.Endocrnie gland  | ( )                | b. Pituitary          |
| 3.Testes           | ( )                | c. First menstruation |
| 4. Female hormone  | ( )                | d. sperm              |
| A. 1-d,2-c,3-b,4-a | B. 1-c,2-d,3-a,4-b |                       |
| C. 1-c,2-a,3-b,4-d | D. 1-c,2-b,3-d,4-a |                       |

Answer: D

Solution:““1 -c,2 - b,3 -d,4 - a

### **Comprehensive :**

“ This section contains paragraph. Based upon each paragraph multiple choice questions have to be answered. Each question has 4 choices (A) , (B) ,(C ) and (D) out of which **ONLY ONE** is correct. Choose the correct option.

- 8.** Sex determination in human beings

Each human cell contains 23 pairs (46) of chromosomes out of 23 pairs 22 pairs of chromosomes are autosomes.Chromosomes whose number and morphology do not differ between male and females of aspecies are called autosomes.The remaining pair is called allosomes or sex chromosomes. Females have two ‘X’ chromosomes in their cells (XX) . Males have one ‘X’ and on ‘y’ chromosomes in their cells (XY) The gametes produced by a man of two types on with X chromosome and other Y chromosome.If sperm carries Y chrmosome and Fertilize the ovum. Then the baby

will have XY condition.So the baby will be a boy.

### **Questions**

- i. Male chromosomes are  
a) XX            b) XY            c) YY            d) None

**Answer: B**

Solution: Male has one X and one Y chromosome -XY.

- ii. Chromosomes whose number morphology do not differ in males and females  
a) auto somes                      b) Allo somes                      c) A & B            d) None

**Answer: A**

Solution: Autosomes are identical in number and shape in both sexes.

iii. If Y chromosome fertilize the ovum result will be

- a) Girl                                      b) Twins                                      c) boy                                      d) None

**Answer: C**

Solution: X (from female) + Y (from male) = XY --> male child.

iv. Number of chromosomes in human

- a) 36                                      b) 42                                      c) 46                                      d) 24

**Answer: C**

Solution: 23 pairs = 46 chromosomes total in each human cell.

## **ARCHIVES**

### **Single answer questions**

1. Secreted materials from ductless glands are called . (Uttarakhand 2011)

- A. Hormones                      B. Enzymes                      C. Plasma                      D. None of these

**Answer: A**

Solution: Ductless glands are endocrine glands ? secrete hormones.

2. Which of the following pairs of hormones controls the onset of puberty in boys and girls respectively. (NTSE 2008)

- A. Testosterone                      B. Progesterone                      C. Both                      D. None

**Answer: C**

Solution: Testosterone (boys), Progesterone (girls) ? Both involved in puberty. ““

3. Ductless glands are also known as (NTSE 2009)

- A. Salivary glands                      B. Endocrine glands                      C. Exocrine glands.                      D. A&B

**Answer: B**

Solution: Ductless glands are endocrine glands because they secrete hormones directly into the bloodstream.

4. Read the following paragraph and choose the correct sequence of words to be filled in the gaps of the paragraph .

The changes which occur at adolescence are controlled by ..... . These are secretions from ..... glands the ..... begins to release from the testis at the onset of puberty. Once ..... puberty is reached in girls ovaries begin to produce ..... The production of these hormones is ..... under the control of another hormone secreted from ..... gland. (

**NTSE 2009)**

- A. Chemical substances, thyroid, testosterone, estrogen, thyroid.  
B. hormones, endocrine, testosterone, estrogen, thyroid.  
C. chemical substances, pituitary, sperms, ovules, thyroid.  
D. hormones, endocrine, testosterone, estrogen, pituitary.

**Answer: D**

Solution: The changes which occur at adolescence are controlled by hormones. ““These are secretions from endocrine glands. ““Testosterone begins to release from the testis at the onset of puberty. ““Once puberty is reached in girls, ovaries begin to produce estrogen. ““The production of these hormones is under the control of another hormone secreted from pituitary gland.