

Strand 3: Living things and their environment

3.1: Human reproductive system

Section A

1. C
2. D
3. C
4. B
5. B
6. C
7. C
8. C
9. A
10. C
11. B

Section B

1.
 - (a) Sexual reproduction
 - (b) Male and female reproductive system
2.
 - (a) Transport the ovum from the ovary towards the uterus.
 - (b) Fertilisation.
3.
 - (a) X – sperm duct, Y – urethra, Z – testis
 - (b) Sperm duct - Transports sperm from the epididymis to the urethra. Urethra – Allows passage of sperm/semen and urine out of the body. Testis - Produces sperm cells.
4.
 - (a) Physical changes in boys: Wet dreams begins. The penis and testes enlarge. Shoulders and chest broaden. Hair starts to grow in the pubic area, on the chest and legs. Beards may also start to grow. Their voice deepens.
 - (b) Physical changes in girls: Their menstrual cycle starts to occur. Breasts start to enlarge. Hips become broader. Hair starts to grow in the pubic area and the armpits.
 - (c) Changes that occur in both boys and girls include: Steady increase in body weight and height. Pimples may appear on the face.
 - (d) Because it is the period when a person changes from childhood to adulthood, undergoing physical, emotional and social changes.
5.
 - (a) Emotional and social challenge.

- (b) Talking to a trusted adult, such as a parent, teacher or counsellor. Interacting with supportive friends and participating in suitable school activities.
 - (c) It provides emotional support and a sense of belonging. It helps learners develop communication and social skills.
- 6.
- (a) Implantation is the attachment of the embryo to the lining of the uterus, where it becomes embedded and begins to receive nourishment.
 - (b) Fertilisation must occur before implantation.
- 7.
- (a) Peer pressure is the influence exerted by people of the same age or social group on an individual to behave or make decisions in a particular way.
 - (b) Say no firmly to activities that are harmful or against their values. Choose friends who encourage responsible behaviour.
 - (c) It enables adolescents to take responsibility for their choices and avoid being influenced into risky or harmful behaviours.
 - (d) Peer pressure.
- 8.
- (a) Testis/testes.
 - (b) The penis transfers sperm into the female reproductive tract during sexual intercourse, allowing sperm to reach the site where fertilisation may occur.
 - (c) Because the scrotum keeps them at a temperature slightly lower than body temperature, which is necessary for the production of healthy sperm.

3.2: Human excretory system

Section A

1. B
2. B
3. C
4. C
5. A
6. B
7. B
8. C
9. B
10. A
11. C
12. B
13. C
14. B
15. B

Section B

1. Kidney, skin, lungs, liver
2.
 - (a) Sweating
 - (b) Sweat glands

- (c) Excess water and salts.
- (d) It removes excess water and salts. It also helps regulate body temperature by cooling the body as sweat evaporates from the skin.

3.

- Drink adequate amounts of clean water to support kidney function and help prevent kidney stones.
- Practise good personal hygiene, including regular bathing and keeping the skin clean.
- Eat a balanced diet with plenty of fruits and vegetables.
- Limit excessive intake of salt to reduce the risk of kidney problems.
- Exercise regularly to maintain a healthy body weight and support overall health.
- Protect the skin from excessive sunlight by using appropriate protective clothing and avoiding prolonged exposure to the sun.
- Avoid unnecessary use of medicines, especially painkillers, which can damage the kidneys when misused.
- Avoid smoking and excessive alcohol consumption.
- Seek medical attention when experiencing persistent skin or urinary problems.
- Maintain adequate rest and sleep as part of a healthy lifestyle.

4.

- (a) A- kidney, B – ureter, C – Urinary bladder
- (b) Kidney → ureter → urinary bladder → urethra → outside the body.
- (c) Excess water and salts
- (d) When a person drinks very little water, the body conserves water by reabsorbing more water from the urine in the kidneys. Therefore, less water is excreted, making the urine more concentrated.

5.

- (a) Epidermis.
- (b) Protects the body from disease-causing microorganisms and physical injury. Reduces water loss from the body.
- (c) Melanin.
- (d) Melanin protects the skin from harmful ultraviolet (UV) radiation from the sun.

6.

- (a) Drink adequate amounts of clean water. Eat a balanced diet with limited salt intake.
- (b) Because some medicines can damage the kidneys when taken unnecessarily, in excessive amounts or incorrectly. A doctor ensures that the medicine and dosage are appropriate and safe.
- (c) Excessive smoking can damage blood vessels and reduce blood flow to the kidneys, interfering with their ability to filter waste products from the blood effectively.
- (d) Nephritis.

7. Removes metabolic waste products from the body. Prevents the accumulation of harmful substances in the body. Helps maintain the correct balance of water and mineral salts in the body. Helps maintain a stable internal environment (homeostasis).

8.

Kidney disorder	Causes
Proteinuria	Damage of the filtering unit of the kidney, low blood pressure or dehydration.
Nephritis	Bacterial and viral infections, allergic reaction to some medication, family history of the disease, low levels of potassium in the body.
Kidney failure	Blood clot in veins and arteries.
Kidney stones	High animal protein intake

9.

- (a) A- Renal vein, B- Ureter
- (b) Filtered blood leaves the kidney through the renal vein.
- (c) Ureter – transports urine from the kidney to the urinary bladder.