

## Grade 9 Natural Science

### Revision Test Term 1

Complete the following questions in your workbook. This term test is also in your textbook.

#### One word items:

Give one word for each of the following descriptions.

1. A passive process during which the muscles relax and carbon dioxide is released.
2. The hormone secreted by the testes.
3. A group of organs that function together.
4. The intake of nutrients in the bloodstream.
5. A muscled organ found inside the mouth

#### Multiple choice questions:

Four possible answers are given for the following questions. Each question has only ONE correct answer. Choose the correct answer.

1. This disease leads to rejection of all food due to an obsession with slimming.  
A. Kwashiorkor  
B. Anorexia nervosa  
C. Anaemia  
D. Bulimia nervosa
2. Which one of the following health issues have no link to the circulatory system?  
A. Kidney stones  
B. Heart attacks  
C. Hypertension  
D. Strokes

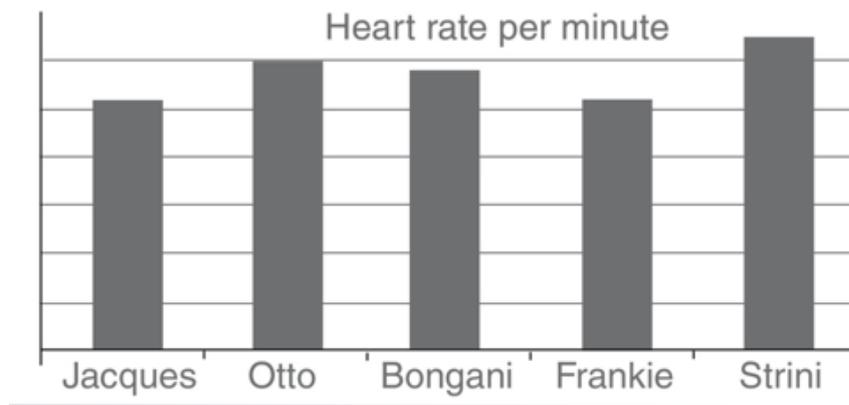
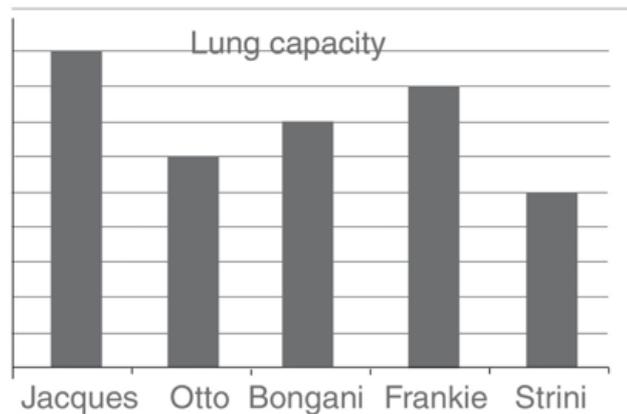
3. The part of the excretory system where urine is stored before it is excreted.
  - A. Bladder
  - B. Kidneys
  - C. Ureter
  - D. Urethra
  
4. Which one of the following is a function of the skeleton?
  - A. It serves as storage for vitamins.
  - B. It serves as storage for minerals.
  - C. It serves as storage for food.
  - D. It serves as storage for water.
  
5. A bone found in the skeleton with the common name lower jaw.
  - A. Sternum
  - B. Clavicle
  - C. Pelvis
  - D. Mandible
  
6. Which one of the following does not form part of the female reproductive system?
  - A. Uterus
  - B. Fallopian tube
  - C. Cervix
  - D. Urethra
  
7. Which one of the following is not in the structure of every cell?
  - A. Cell wall
  - B. Nucleus
  - C. Cytoplasm
  - D. Membrane

8. The part of the eye that determines the size of the pupil is the:
- A. cornea
  - B. iris
  - C. yellow spot
  - D. optic nerve
9. Which one of the following is not one of the ossicles?
- A. Hammer
  - B. Anvil
  - C. Stirrup
  - D. Cochlea
10. This part of the brain is the centre of all the senses.
- A. Hypothalamus
  - B. Cerebellum
  - C. Cerebrum
  - D. Medulla oblongata

Contextual questions:

1. There are five boys in Grade 9 that all participate in different sports. Jacques plays rugby, Otto plays hockey, Bongani plays soccer, Frankie is the fastest athlete and Strini plays cricket. The five boys argue over which of them is the fittest. They do experiments they learned about in Natural sciences to determine their lung capacity. Each of them monitors their heart rate.

The following graphs are compiled from their results.



- 1.1 Which one of the boys is the fittest according to the graphs?
- 1.2 Give a reason for your answer in Question 1.1.
- 1.3 Why would a person who is fit have a greater lung capacity than a person who is unfit?
- 1.4 Is it necessarily a fact that rugby players are more fit than soccer players?

1.5 Use the table to show three differences between inhalation and exhalation.

| Inhalation | Exhalation |
|------------|------------|
|            |            |
|            |            |
|            |            |

1.6 What cleans the air when it is inhaled?

1.7 Name the three different types of blood vessels that are found in the human body and briefly give the function of each one.

1.8 Explain why the respiratory system and the circulatory system must work in conjunction with each other in the human body.

1.9 Name one negative effect that smoking cigarettes has on the lungs and the circulatory system.

2.

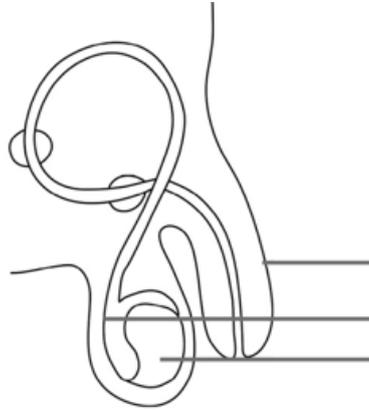
2.1 Match column A to column B by placing the correct name with each picture.

|       | Column A  |   | Column B            |
|-------|---|---|---------------------|
| 2.1.1 |  | A | IUD                 |
| 2.1.2 |  | B | Contraceptive pills |
| 2.1.3 |  | C | Diaphragm           |
| 2.1.4 |  | D | Condom              |

2.2 What does IUD stand for?

2.3 Which other method of contraception is not given in the table?

- 2.4 Make use of the following diagram and answer the questions that follow.



- 2.4.1 Provide labels for the sketch above.
- 2.4.2 What is the function of the epididymis?
- 2.4.3 Explain how men are sterilised.
- 2.4.4 Why is it necessary for the testes to be in the scrotum?
- 2.4.5 Briefly explain what happens to the scrotum if the testes are exposed to cold.
- 2.4.6 What consequences could exposure to heat have for the testes?
- 2.5 Name one negative effect that each of smoking, drugs and alcohol can have on pregnancy.
- 2.6 Between the ages of 10 and 14 years the average human reaches a phase called puberty. Answer the following questions concerning puberty.
- 2.6.1 During the phase of puberty girls start to menstruate. Briefly explain what menstruation is.
- 2.6.2 Name five of the most common changes that occur in girls during puberty.
- 2.7 The last phase of human reproduction is pregnancy.
- 2.7.1 Approximately how long does an average pregnancy last?
- 2.7.2 What is the purpose of the placenta and umbilical cord during pregnancy?
- 2.7.3 What is the difference between a zygote, an embryo, a foetus and a baby?

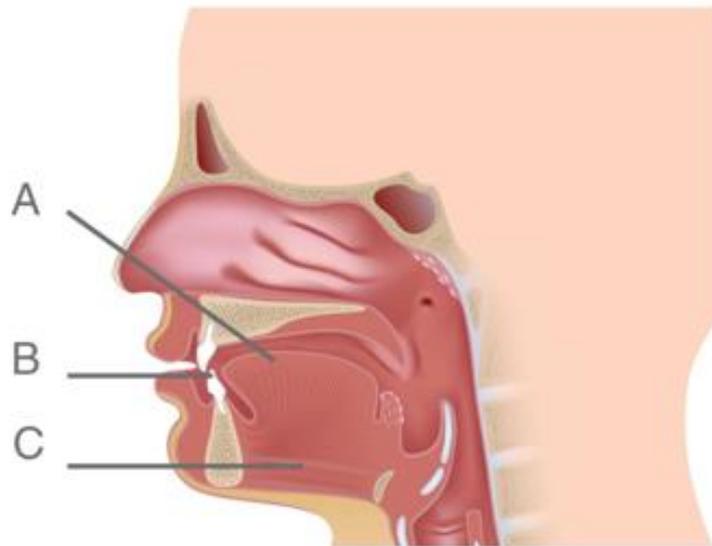
3. Mercia, Sheina, Thombi and Roxy are in the Grade 9 relay team. They want to end this year's season unbeaten. The four girls know that it is going to take a lot of hard work and strict discipline to reach their goal, but they are determined to succeed.

3.1 The girls know that the right diet is going to play a major role in their success. They decide to use the food pyramid to work out their diet. The foods that they have at their disposal are: chicken, lettuce, olive oil, water, apples, carrots, nuts, eggs, cauliflower, spinach, strawberries, fish, rice, milk, cheese, whole grain bread, butter, bananas, mince and pasta.

3.1.1 Draw a food pyramid for the four girls by using the given food types. Also indicate how many portions they are allowed to eat each day from the specific food group.

3.1.2 Why is it important for athletes to follow a healthy diet?

3.2 Study the sketch of the mouth and answer the questions that follow.



3.2.1 In which three systems of the human body does the mouth have a role to play?

3.2.2 Provide labels for the parts marked A, B and C

3.2.3 What are the four basic tastes that can be sensed by the tongue?

3.2.4 Which role does the tongue play in the digestive system?

3.2.5 In which part of the digestive system does the most absorption take place?

3.2.6 Name a disease caused by a deficiency of the following foods.

- i) Carbohydrates
- ii) Vitamins
- iii) Proteins
- iv) Fats
- v) Water

3.2.7 Match column A to column B by writing the letter next to the correct symptom.

|         | Column A                |   | Column B         |
|---------|-------------------------|---|------------------|
| 3.2.7.1 | Fatigue and blackouts   | A | Anorexia nervosa |
| 3.2.7.2 | Stunted growth          | B | Kwasjiorkor      |
| 3.2.7.3 | Drastic weight loss     | C | Anaemia          |
| 3.2.7.4 | Swelling of the abdomen | D | Rickets          |
| 3.2.7.5 | Gnarled bones           | E | Marasmus         |

3.2.8 Explain what happens during mechanical digestion.

3.2.9 What other type of digestion takes place in the human body?

4. Ester lives in the city. She loves the outdoors and spends each holiday on her grandfather's farm outside Bela-Bela. When she is on the farm, she often goes hiking and tries to spend as much time in the fresh air as possible.

4.1 Which senses can Ester use to observe nature on her grandfather's farm?

4.2 Explain in point form how a person hears.

4.3 Which part of the brain is used to interpret sensory observations?

4.4 Ester jogs regularly. As it gets really hot during summer in Limpopo province, Ester starts to sweat quickly.

4.4.1 Explain why Ester sweats.

4.4.2 One day while jogging, Ester sees a snake slithering up a tree. Ester is frightened of snakes. Explain how Ester will react to this impulse.

4.4.3 What is a stimulus?

4.4.4 What type of neuron will convey the impulses to the brain in this case?

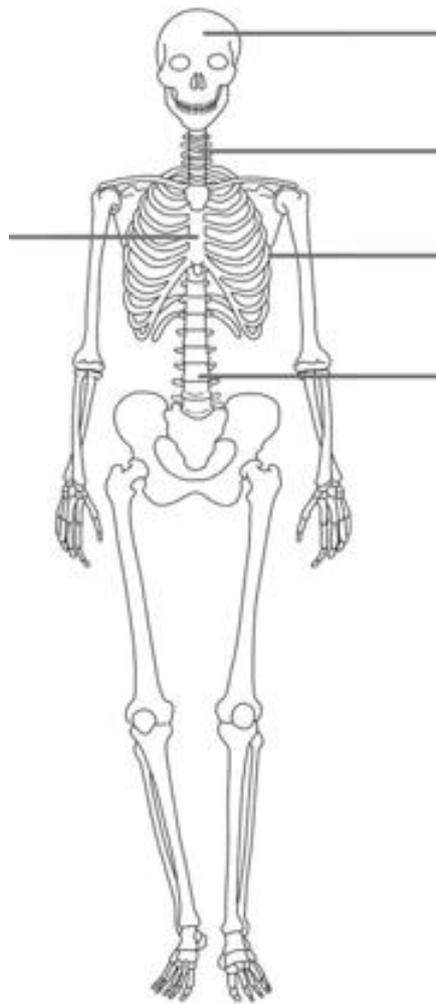
4.4.5 Which other types of neurons are found in the body?

4.5 Ester has a cousin, Etienne, who is 21 years old. He is visiting the farm for the holiday. After Etienne has drunk a couple of beers one Saturday evening, he wants to drive into town to visit one of his friends.

4.5.1 Name four reasons why it is dangerous to drive after you have consumed alcohol.

5.

5.1 Indicate all bones that form part of the axial skeleton.



5.2 How many bones does the human skeleton consist of?

5.3 Name three functions of the skeleton.

5.4 Why is the skeleton dependent on muscles?

5.5 Name three types of muscles.

5.6 Explain what antagonistic muscles are and how they work.

5.7 Why are muscles dependent on the circulatory system?

6. Kidney stones, bladder infections and kidney failure are three examples of health issues associated with the excretory system.
- 6.1 Which bacteria cause bladder infection?
  - 6.2 Name two symptoms of bladder infections.
  - 6.3 How do kidney stones form?
  - 6.4 Name three functions of the kidneys.
  - 6.5 What does urine consist of?
  - 6.6 What do you understand by the term “osmoregulation”?
7. Study the picture below and answer the questions that follow.



- 7.1 Which device is represented by this picture?
- 7.2 Provide the labels for the picture above.
- 7.3 Give the function of each of the parts as named in Question 7.2.

7.4 Thanks to the apparatus above, biologists can observe cells of animals and plants more easily. Use the table below to indicate three differences between a plant cell and an animal cell.

|           | Plant cell | Animal cell |
|-----------|------------|-------------|
| Cell wall |            |             |
| Form      |            |             |
| Vacuole   |            |             |
|           |            |             |

7.5 Explain in one sentence what each of the following is.

7.5.1 Stem cell

7.5.2 Organism

7.5.3 Tissue

7.5.4 Organ

8. The circulatory system plays a cardinal role in the transport of nutrients and waste products in the body.

8.1 What are the components of blood?

8.2 Name a function of each of the components.

8.3 Where in the human body is the heart situated?

8.4 Name the functions of the heart.

8.5 Why does a person's heart beat increase during exercise?