**KENYA JUNIOR SCHOOL EDUCATION ASSESSMENT**  
**GRADE 9 – INTEGRATED SCIENCE 905/1**  
(Paper 1: Theory)  
**Time: 1 hour 40 mins**

**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  
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### ****INSTRUCTIONS****

a) Write your name, school, stream, and date in the spaces provided above.  
b) This paper consists of two sections: **A and B.**  
c) **Section A** comprises **Multiple Choice Questions** numbered **1 to 30.**  
d) **Section B** comprises **Structured Questions** numbered **31 to 35.**  
e) Answer **ALL** the questions in **Section A** in the table provided below.  
f) Answer **ALL** the questions in **Section B** in the spaces provided in this QUESTION PAPER.  
g) **Do NOT remove any page from this question paper.** Answer all questions in **English.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Qn No.** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** |
| Answer |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Qn No. | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| Answer |  |  |  |  |  |  |  |  |  |  |

### ****SECTION A: (30 MARKS)****

1. Identify the laboratory apparatus marked A.  
   A. Holder  
   B. Stand  
   C. Clamp  
   D. Grippe
2. Identify the part of the Bunsen burner marked B.  
   A. Chimney  
   B. Collar  
   C. Flame  
   D. Airhole
3. The first element of the periodic table is:  
   A. Lithium  
   B. Beryllium  
   C. Hydrogen  
   D. Helium
4. Which of the following is NOT an inert gas?  
   A. Oxygen  
   B. Argon  
   C. Helium  
   D. Neon
5. Grade 9 learners wrote the symbols of various elements:
   * Claire: Nitrogen - N
   * Mercy: Sodium - Na
   * Jacqueline: Calcium - K
   * Andrea: Magnesium - Mg  
     **Whose answer was incorrect?**  
     A. Claire  
     B. Mercy  
     C. Jacqueline  
     D. Andrea
6. The property of metals that makes them reflect light is called:  
   A. Lustre  
   B. Reflection  
   C. Refraction  
   D. Shining
7. What happens when a metal rod is heated in an experiment?  
   A. The metal rod expands and bursts.  
   B. Apparatus A melts down.  
   C. The wax melts instantly, and the pin falls down.  
   D. The wax melts after some time, and the pin falls down.
8. Which method of preventing rusting involves coating iron objects with a thin layer of chromium or tin using electricity?  
   A. Electroplating  
   B. Plastic coating  
   C. Galvanizing  
   D. Sacrificial protection
9. A learner studied the pH of different substances:

| **Substance** | **pH** |
| --- | --- |
| Q | 4 |
| P | 7 |
| R | 14 |
| S | 10 |
| T | 1 |

**Which substance is most likely to be sulphuric acid?**  
A. P  
B. R  
C. S  
D. T

1. Which substance is most likely to be hydrogen hydroxide (water)?  
   A. P  
   B. R  
   C. S  
   D. T
2. Identify the type of microscope drawn below. *(Diagram required)*
3. Which part of a microscope quickly brings the image into rough focus?  
   A. Fine adjustment knob  
   B. Coarse adjustment knob  
   C. Body tube  
   D. Nose piece
4. What is the process by which plants make their own food using sunlight?  
   A. Respiration  
   B. Digestion  
   C. Photosynthesis  
   D. Transpiration
5. Which of the following is found in both plant and animal cells, **except**:  
   A. Vacuole  
   B. Nucleus  
   C. Cytoplasm  
   D. Cell membrane
6. The root drawn below is most likely to be from: *(Diagram required)*  
   A. Sorghum  
   B. Maize  
   C. Beans  
   D. Sugarcane
7. Which of the following is a proper hygiene practice for maintaining healthy hair?  
   A. Not combing hair to avoid damage.  
   B. Using excessive amounts of hair styling products.  
   C. Washing hair regularly with appropriate shampoo.  
   D. Sharing combs with others.
8. Which of the following is NOT an advantage of hard water?  
   A. It has calcium salts that help in the development of healthy teeth.  
   B. It is good for animals that lay eggs since calcium is needed for eggshells.  
   C. It prevents lead from dissolving in water pipes.  
   D. It leads to mineral deposits that reduce water flow and energy efficiency.
9. In males, where is sperm produced?  
   A. Seminal vesicle  
   B. Epididymis  
   C. Prostate gland  
   D. Testes
10. What is the role of brushing teeth regularly?  
    A. To prevent cavities and gum disease.  
    B. To strengthen the teeth.  
    C. To whiten teeth.  
    D. To improve overall health.
11. Which hormone is primarily responsible for the development of male secondary sexual characteristics?  
    A. Estrogen  
    B. Progesterone  
    C. Testosterone  
    D. Oxytocin
12. What is the function of the menstrual cycle?  
    A. To produce sperm  
    B. To prepare the body for pregnancy  
    C. To produce eggs  
    D. To regulate body temperature
13. Which structure prevents food from entering the trachea when swallowing?  
    A. Uvula  
    B. Epiglottis  
    C. Esophagus  
    D. Pharynx
14. Which part of the male reproductive system adds fluid to sperm to form semen?  
    A. Prostate gland  
    B. Seminal vesicles  
    C. Bulbourethral gland  
    D. All of the above
15. Which enzyme in saliva helps break down carbohydrates?  
    A. Pepsin  
    B. Protease  
    C. Lipase  
    D. Amylase

**25.** Which of the following gases is responsible for global warming?  
A. Nitrogen B. Oxygen C. Carbon dioxide D. Helium

**26.** What is the SI unit of force?  
A. Watt B. Newton C. Joule D. Pascal

**27.** The **boiling point of pure water** at sea level is:  
A. 0°C B. 50°C C. 100°C D. 212°C

**28.** Which of the following is an example of a **non-renewable** energy source?  
A. Solar energy B. Wind energy C. Coal D. Hydroelectric power

**29.** Which of the following **cells** lacks a nucleus?  
A. Liver cell B. Red blood cell C. Muscle cell D. Plant cell

**30.** The part of the digestive system responsible for **nutrient absorption** is the:  
A. Stomach B. Large intestine C. Small intestine D. Esophagus

### ****SECTION B: (40 MARKS)****

**(Answer all the questions in the spaces provided.)**

**31. (a)** Define an atom and name its three main subatomic particles. (2 marks)

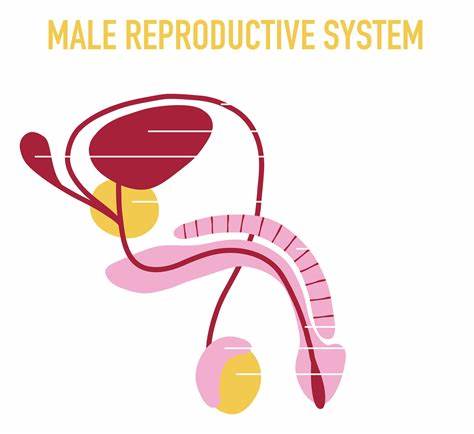
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**(b)** The atomic number of **potassium (K)** is **19.** Draw or describe its **electron arrangement.** (2 marks)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**32.** The following table classifies **elements** into **metallic and non-metallic** elements. Fill in the missing elements. (6 marks)

|  |  |
| --- | --- |
| **Metallic Elements** | **Non-metallic Elements** |
| i) Sodium (Na) | iv) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| ii) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | v) Oxygen (O) |
| iii) Iron (Fe) | vi) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**33.** The diagram below represents the **male reproductive system.** Study it and answer the questions that follow. (5 marks)

X

(a) Name the part labeled **X**. (1 mark)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
(b) What is the function of the **penis**? (2 marks)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
(c) How is the **sperm cell adapted** to its function? (2 marks)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**34.** The table below shows the pH values of different substances. Study it and answer the questions that follow. (5 marks)

|  |  |
| --- | --- |
| **Substance** | **pH** |
| Q | 4 |
| P | 7 |
| R | 14 |
| S | 10 |
| T | 1 |

(a) Which substance is most likely to be **sulphuric acid**? (1 mark)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
(b) Which substance is most likely to be **pure water**? (1 mark)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
(c) Which substance is most likely to be **sodium hydroxide**? (1 mark)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
(d) Identify the **weak acid** in the table. (1 mark)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
(e) Identify the **weak base** in the table. (1 mark)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**35.** The diagram below represents a **microscope.** Study it and answer the questions that follow. (5 marks)

M



(a) Identify the part labeled **M**. (1 mark)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
(b) Which part **quickly** brings the image into rough focus? (1 mark)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
(c) What is the function of the **objective lenses**? (1 mark)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
(d) State one difference between a **light microscope** and an **electron microscope**. (2 marks)

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**LEARNER'S SCORE**

|  |  |
| --- | --- |
| SCORES | TOTAL |
| **A (Out of 30)** |  |
| **B (Out of 40)** |  |
| **Final Score (Out of 70)** |  |

**This paper consists of 7 printed pages. Candidates should check the question paper to confirm that all pages are printed as indicated and that no questions are missing.**

**MARKING SCHEME**

**SECTION A: (30 MARKS)**

1. (C)
2. (B)
3. (A)
4. (D)
5. (C)
6. (A)
7. (B)
8. (D)
9. (C)
10. (A)
11. (B)
12. (C)
13. (D)
14. (A)
15. (C)
16. (B)
17. (D)
18. (A)
19. (C)
20. (B)
21. (D)
22. (C)
23. (A)
24. (B)
25. (C)
26. (B)
27. (C)
28. (C)
29. (B)
30. (C)

**31. (a)**

* An atom is the smallest unit of matter that retains the properties of an element. *(1 mark)*
* The three main subatomic particles are:
  + **Proton** (positively charged)
  + **Neutron** (neutral/no charge)
  + **Electron** (negatively charged) *(1 mark)*

**(b)**

* The electron arrangement of Potassium (K, Atomic number 19) is **2, 8, 8, 1**. *(2 marks)*

**32.** *(6 marks - 1 mark for each correct answer)*

| **Metallic Elements** | **Non-metallic Elements** |
| --- | --- |
| i) Sodium (Na) | iv) Carbon (C) |
| ii) Magnesium (Mg) | v) Oxygen (O) |
| iii) Iron (Fe) | vi) Nitrogen (N) |

**33.** *(5 marks)*

**(a)** The part labeled **X** is the **testis**. *(1 mark)*

**(b)** The function of the **penis** is:

* It delivers sperm into the female reproductive system during intercourse. *(1 mark)*
* It allows the passage of urine from the body. *(1 mark)*

**(c)** Adaptations of the sperm cell:

* It has a **tail (flagellum)** to enable movement. *(1 mark)*
* It has a **head with enzymes** to penetrate the egg. *(1 mark)*

**34.** *(5 marks - 1 mark for each correct answer)*

(a) **T** is most likely to be **sulphuric acid** (pH = 1). *(1 mark)*  
(b) **P** is most likely to be **pure water** (pH = 7). *(1 mark)*  
(c) **R** is most likely to be **sodium hydroxide** (pH = 14). *(1 mark)*  
(d) The **weak acid** is **Q** (pH = 4). *(1 mark)*  
(e) The **weak base** is **S** (pH = 10). *(1 mark)*

**35.** *(5 marks)*

**(a)** The part labeled **M** is the **eyepiece lens**. *(1 mark)*

**(b)** The part that quickly brings the image into rough focus is the **coarse adjustment knob**. *(1 mark)*

**(c)** The function of the **objective lenses** is to magnify the specimen at different levels. *(1 mark)*

**(d)** One difference between a **light microscope** and an **electron microscope**:

* A light microscope uses **light rays** to form images, while an electron microscope uses **electrons**. *(1 mark)*
* A light microscope has **lower magnification**, while an electron microscope has **higher magnification**. *(1 mark)*

**SECTION A (30 Marks)**

1. **Identify the laboratory apparatus marked A.**
   * **Answer:** C. **Clamp**
2. **Identify the part of the Bunsen burner that is marked B.**
   * **Answer:** B. **Collar**
3. **The first element of the periodic table is:**
   * **Answer:** C. **Hydrogen**
4. **Which of the following is NOT an inert gas?**
   * **Answer:** A. **Oxygen**
5. **Whose answer was incorrect in writing chemical symbols?**
   * **Answer:** C. **Jacqueline** (Calcium’s correct symbol is **Ca**, not **K**).
6. **The property of metals that makes them reflect light on their surfaces is called:**
   * **Answer:** A. **Lustre**
7. **What happens when the metal rod is heated in the experiment?**
   * **Answer:** D. **The wax melts after some time, and the pin falls down.**
8. **Which method of preventing rusting involves coating iron objects with a thin layer of chromium or tin using electricity?**
   * **Answer:** A. **Electroplating**
9. **Which substance is most likely to be sulfuric acid (H₂SO₄) based on pH values?**
   * **Answer:** D. **T** (pH 1, which is very acidic).
10. **Which substance is most likely to be hydrogen hydroxide (H₂O)?**

* **Answer:** A. **P** (pH 7, which is neutral, meaning water).

1. **Which substance is most likely to be water?**

* **Answer:** B. **P** (pH 7).

1. **Identify the type of microscope drawn below.**

* **Answer:** **A compound microscope**.

1. **Which part of a microscope quickly brings the image into rough focus?**

* **Answer:** B. **Coarse adjustment knob**

1. **What is the process by which plants make their own food using sunlight?**

* **Answer:** C. **Photosynthesis**

1. **Both plant and animal cells have the following except:**

* **Answer:** D. **Cell wall** (Only plant cells have a cell wall).

1. **The root drawn is most likely to be that of:**

* **Answer:** B. **Maize** (because maize has fibrous roots).

1. **Which of the following is a proper hygiene practice for maintaining healthy hair?**

* **Answer:** C. **Washing hair regularly with appropriate shampoo.**

1. **Which of the following is NOT an advantage of hard water?**

* **Answer:** D. **Hard water leads to mineral deposits or scale in plumbing pipes, appliances, and water heaters.**

1. **In males, where is sperm produced?**

* **Answer:** D. **Testes**

1. **What is the role of brushing teeth regularly?**

* **Answer:** A. **To prevent cavities and gum disease.**

1. **Which hormone is primarily responsible for the development of male secondary sexual characteristics?**

* **Answer:** C. **Testosterone**

1. **What is the function of the menstrual cycle?**

* **Answer:** B. **To prepare the body for pregnancy.**

1. **Which structure prevents food from entering the trachea when swallowing?**

* **Answer:** B. **Epiglottis**

1. **Which part of the male reproductive system adds fluid to sperm to form semen?**

* **Answer:** D. **All of the above** (Prostate gland, Seminal vesicles, Bulbourethral gland).

1. **Which enzyme in saliva helps break down carbohydrates?**

* **Answer:** D. **Amylase**

**SECTION B**

**31. Electron Configuration of Potassium (K)**

* **Electron configuration of potassium:** **2, 8, 8, 1**.

**32. Differences Between Metallic and Non-Metallic Elements**

| **Metallic Elements** | **Non-Metallic Elements** |
| --- | --- |
| Good conductors of heat and electricity | Poor conductors of heat and electricity |
| Malleable and ductile | Brittle and non-ductile |
| Have high melting and boiling points | Have low melting and boiling points |
| Lustrous (shiny) | Dull appearance |
| Form positive ions in reactions | Form negative ions in reactions |
| React with acids to produce hydrogen gas | Do not react with acids |

**33. Diagram of the Male Reproductive System**

**a) Label the parts of the male reproductive system (if provided with a diagram):**

* **Testes**: Produce sperm and testosterone.
* **Epididymis**: Stores and matures sperm.
* **Vas deferens**: Transports sperm to the urethra.
* **Prostate gland**: Adds fluid to sperm to form semen.
* **Seminal vesicles**: Produce nutrient-rich fluid for sperm.
* **Penis**: Delivers semen into the female reproductive tract.

**b) Give one function of the penis (2 marks).**

* The **penis** delivers sperm into the female reproductive system during sexual intercourse.

**c) How is the sperm cell adapted to its function?**

* **Tail (flagellum):** Enables movement to swim towards the egg.
* **Midsection with mitochondria:** Produces energy for movement.
* **Head with acrosome:** Contains enzymes to penetrate the egg during fertilization.