**Biological Science Mid Topic Test Revision Sheet**

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Introduction to Microscopes**

1. Label the microscope below

 

1. State the function of the parts of the microscope indicated in the table below.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Function |  | Function |
| a |   | e |   |
| c |   | f |   |
| d |   | g |   |

1. Calculate the total magnification of the following lens pairings

|  |  |  |
| --- | --- | --- |
| **Ocular(eye piece) (X)** | **Objective lens** **(X)** | **Total magnification (X)****Ocular x objective lens** |
|  10  | 4 |   |
| 10  | 10 |   |
| 10 |   40 |   |

**Viewing Cells**

1. Define field of view and explain how field of view varies with magnification.
2. Explain the difference between unicellular and multicellular organisms.

**Identifying cell organelles and describe their functions**

1. Complete the following table.

|  |  |
| --- | --- |
| * Draw a plant cell include - Cell membrane, cell wall, vacuole, cytoplasm, mitochondria, chloroplast, nucleus (including chromosomes), ribosomes
 | * Draw an animal cell include - Cell membrane, small vacuoles, cytoplasm, mitochondria, nucleus (including chromosomes), ribosomes
 |
|  |  |
| **Organelle** | **Function** |
| **Cytoplasm** |  |
| **Ribosome** |  |
| **Chloroplast** |  |
| **Mitochondria** |  |
| **Cell membrane** |  |
| **Nucleus** |  |
| **Vacuole** |  |

**Comparing Animal, Plant and Fungal Cells**

1. Complete the following table of characteristics.

|  |  |  |  |
| --- | --- | --- | --- |
| **Characteristic** ( tick present X absent) | **Plant**  | **Animal** | **Fungi** |
| Cell wall (if so what is it made of) |  |  |  |
| Cell membrane |  |  |  |
| Vacuole  |  |  |  |
| Cytoplasm |  |  |  |
| Mitochondria |  |  |  |
| DNA in a nucleus |  |  |  |
| Chloroplasts |  |  |  |
| Ribosomes |  |  |  |
| Usually unicellular or multicellular |  |  |  |

**Specialised Cells**

1. Draw the following specialised cells. Explain how each is specialised.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Nerve cell | Muscle cell | Sperm | Root hair cell | Guard cell |
|  |  |  |  |  |

**Mitosis**

1. Use two different coloured pens to draw a cell undergoing mitosis.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |

1. Complete the following passage by using the words below.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **repair** | **body** | **division** | **2** | **chromosome** | **DNA** | **growth** | **exact** | **46** |

Mitosis is a type of cell \_\_\_\_\_\_\_\_\_\_\_\_\_. It is cell division for \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_. Mitosis takes place all over the \_\_\_\_\_\_\_\_\_\_. In mitosis the cell replicates the \_\_\_\_\_\_\_\_. The cell then divides into two and a copy of each \_\_\_\_\_\_\_\_\_\_\_\_\_moves into each cell. \_\_\_\_\_\_\_\_\_ identical daughter cells are produced. The daughter cells are \_\_\_\_\_\_\_ copies of the parent cell that divided.

Human body cells have \_\_\_\_\_\_\_\_\_\_\_ chromosomes in their nucleus. Each daughter cell produced from a human body cell undergoing mitosis would have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ chromosomes in its nucleus.

**Levels of Organisation**

1. List the following in order from simplest to most complex tissue, system, cell, organ

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |

1. Explain the difference between cells and tissues.

**Body Systems**

1. Complete the following table by outlining the main function of each of the body systems.

|  |  |
| --- | --- |
| **Body system** | **Main Function** |
| Digestive |  |
| Respiratory |  |
| Excretory |  |
| Circulatory |  |
| Reproductive |  |
| Endocrine |  |
| Musculoskeletal |  |
| Immune |  |
| Nervous |  |

**Digestive System**

1. Label the **following structures on the digestive system diagram**.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| mouth | oesophagus | stomach | pancreas | Small mintestine | Large intestine |

 

Provide the function/s of each of the followin structures of the digestive system.

|  |  |
| --- | --- |
| mouth | 1.2. |
| oesophagus |  |
| stomach | 1.2. |
| panctreas |  |
| Small intestine | 1.2. |
| Large intestine |  |