1 What is the main function of a mitochondrion? site of respiration / produce ATP (1)

2 What is the main function of the Golgi body modification and processing of proteins / production of lysosomes? (1)

3 Which structure has ribosomes attached to its surface? rough endoplasmic

reticulum\_ (1)

4 What is the function of ribosomes? \_protein synthesis (1)

5 What cellular processes would be taking place in the following cells?

1. a cell with many Microvilli? \_\_\_ absorption \_\_\_\_\_\_\_ \_\_\_\_\_(1)
2. a cell with much rough endoplasmic reticulum? protein synthesis \_\_\_(1)
3. a cell with much smooth endoplasmic reticulum? \_\_\_ lipid synthesis \_\_(1)
4. a cell with many Golgi bodies? \_\_\_ secretion / protein synthesis \_\_\_\_(1)

6 Put the following organelles in order of increasing size (smallest to largest)

*rough endoplasmic reticulum; ribosome; nucleus; mitochondrion; lysosome*

ribosome; rough ER; lysosome; mitochondrion; nucleus (3)

Magnification = x 3000

7 Describe the path of a newly synthesised polypeptide from a ribosome to the cell surface membrane.

Cisternae of rough ER → transfer vesicle → Golgi apparatus →Golgi vesicle → cell surface membrane.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(3)

8 Complete the table giving 3 differences between prokaryotic and eukaryotic cells.

|  |  |
| --- | --- |
| **Prokaryotic cells** | **Eukaryotic cells** |
| **No true nucleus, only an area where DNA is found** | Distinct nucleus, with a nuclear membrane |
| **DNA not associated with proteins** | DNA associated with proteins called histones |
| **Some DNA may be in the form of circular strands called plasmids** | There are no plasmids and DNA is linear |
| **No membrane bound organelles** | membrane bound organelles such as mitochondria are present |
| **No chloroplasts, only bacterial chlorophyll associated with the cell surface membrane in some bacteria** | Chloroplasts present in plants and algae |
| **Ribosomes are smaller (70s)** | Ribosomes are larger 80s |
| **Cell wall made of murein (peptidoglycan)** | Where present cell wall made mostly of cellulose or chitin in fungi |
| **May have outer mucilaginous layer called a capsule** | No capsule |

(3)