**Classification Homework**

Mark (out of 21) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

21 min

21 marks

*% \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

**1.** The leopard, *Panthera pardus*, is a large member of the cat family.

Complete the following table to show the full classification of the leopard.

|  |  |
| --- | --- |
| **Kingdom** | …………………………………………… |
| …………………………………………… | Chordata |
| **Class** | Mammalia |
| ………………………………………….. | Carnivora |
| **Family** | Felidae |
| **Genus** | …………………………………………… |
| …………………………………………… | *pardus* |

[Total 5 marks]

**2.** The following table compares some of the features of prokaryotic cells and eukaryotic **animal** cells.

Complete the table by placing a tick () or a cross () in each box. The first one has been done for you.

|  |  |
| --- | --- |
| prokaryotic cells | eukaryotic **animal** cells |
| DNA present |  |  |
| nuclear envelope (membrane) present |  |  |
| cell wall present |  |  |
| plasmids present in cytoplasm |  |  |
| naked DNA present |  |  |

[Total 4 marks]

**3.** Historically, all organisms were classified into just two kingdoms. In 1988 a five-kingdom system of classification was accepted. In 1990 a three domain system was proposed.

Discuss, with reference to the **Prokaryotes**, the reasons why classification systems are not universally accepted and why they change over time.

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[Total 4 marks]

**4.** In this question, one mark is available for the quality of spelling, punctuation and grammar.

The figure below shows a green alga, *Chlamydomonas*, and a cyanobacterium, *Microcystis*.



|  |
| --- |
| Green algae and cyanobacteria (blue-green bacteria) were once classified in the Kingdom Plantae. As more information became available, taxonomists re-classified these organisms into separate kingdoms. The green algae are now in the Kingdom Protoctista. Although cyanobacteria and green algae share certain structural and functional features, they are placed in different kingdoms. |

Suggest why the green algae and cyanobacteria were originally considered to be plants **and** explain why taxonomists decided to re-classify them into **separate** kingdoms.

Use the information given in the figure and the box to help you. You may annotate the figure if you wish.

*(Allow one lined page)*

[7]

Quality of Written Communication [1]

[Total 8 marks]