**Formative Assessment**  Name: **Answer Key**
BIOLOGY: Comparing Digestive Systems Time: 10 minutes

The diagram shows the human digestive system.

**1.** What are systems composed of? **(1 marks)**

 **Multiple organs working together**

**2.** Herbivores (i.e. koalas) have quite long digestive systems compared to the short digestive systems of carnivores (i.e. vultures). ***Explain*** the cause of this difference. **(4 marks)**

**This difference in digestive tract length is primarily related to the types of food they consume, and the challenges associated with breaking down those foods.**

**(1) - Herbivores primarily consume plant material, which is often tough, fibrous, and difficult to digest.**

**(1) - A longer digestive tract provides sufficient time for digestion to occur.**

**(1) - In contrast, carnivores consume animal tissues, which are generally easier to digest compared to plant materials.**

**(1) - Animal tissues contain proteins and fats that can be broken down more efficiently in a shorter digestive system.**

**3.** Other than digestive tract length, ***describe*** one (1) piece of evidence that humans eat meat and one (1) piece of evidence that humans eat plants. **(4 marks)**

 **Any one pair from each list below:**

|  |  |
| --- | --- |
| **Evidence for eats meat** | **Evidence for eats plants** |
| Teeth have pointy canines (1) for tearing through meat (1)  | Teeth also have flat molars (1) for grinding up plant matter (1) |
| The cecum is relatively small (1) because it is not need to digest large amounts of fibrous plant matter (1) | Produce salivary amylase (1) to break down carbohydrates found in plant matter (1).  |

**4.** Some herbivores (such as rabbits and koalas), eat their faeces. Use your understanding of the herbivorous digestive system to ***propose*** one (1) reason these animals may do this. **(2 marks)**

**Answers will vary – allow variation in student responses.**

**Some example responses include:**

* To re-digest and extract additional nutrients from partially digested material.
* Reintroduce essential gut microbes that may have been excreted in the initial faecal material. This process aids in maintaining a healthy balance of microorganisms in the digestive tract, optimizing the efficiency of plant material digestion.
* Some essential nutrients, such as B vitamins, are synthesized by bacteria in the hindgut of herbivores. Re-eating faeces allows the animals to recover these nutrients, ensuring that they are not lost in the first pass through the digestive system.

**PERSONAL LEARNING REFLECTION**

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| --- | --- |
| One thing I have learnt from doing this activity is… | **SCORE:**\_\_\_\_\_\_ / 11\_\_\_\_\_\_\_ % |