NAME: OSIBANJO IYANUOLUWA A.

MATRIC NUMBER: 17/MHS03/029

COURSE CODE: ANA 314

1. What is comparative anatomy

Comparative anatomy is the study of similarities and differences in the anatomy of different species.

1. Highlight the criteria necessary to caring for laboratory animals

The criteria’s necessary for the care and use of laboratory animals establishes standards for laboratory animal environments in regard to:

1. Room temperature: : Temperatures of 65-75°F (~18-23°C) (For mouse and rats)
2. Humidity : For mouse and rats (40-60% humidity are recommended)
3. Ventilation
4. Illumination and light schedule: For practical considerations due to common work hours, researchers should be aware of the lighting schedules used in the rodent housing rooms (commonly 12 hr. light: 12 hr. dark or 14 hr. light: 10 hr. dark).

If researchers working late turn on the lights in the animal rooms during the dark period, the disruption of the light schedule may cause the animals to be perturbed. This may have effects on breeding performance and on circadian rhythms. Ensure lights are not used and that researchers and technicians do not enter the mouse room during the dark cycle.

1. Noise moderation
2. Highlight the similarities and differences in the digestive system anatomy of amphibians

**Differences**

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| |  |  | | --- | --- | | Frog digestive system | Human digestive system | | Frogs do not have strong teeth. They use their teeth to hold their prey | Human have string teeth to chew their food | | Frogs swallow the prey without chewing | Chewing is a type of mechanical digestion in humans | | During deglutition, frogs blink or close their eyes | This is not seen in humans | | Frogs have two sets of teeth: maxillary teeth and vomerine teeth | Humans have one set of teeth in their oral cavity | | The tongue of a frog is attached to the starting point of the mouth | The tongue of humans is attached to the back of the mouth | | The tip of tongue is folded backwards | The tip of the human tongue is straight | | Have a shorter small intestine. The two parts of the small intestine of frogs are duodenum and ileum | Have a long small intestine. It has three parts: duodenum, jejunum and ileum | | The elimination of undigested materials occur through the cloaca | The elimination of undigested materials occur through rectum | | The absorption of nutrients occurs in the ileum | Absorption mainly occurs in the jejunum | | Frogs do not have an appendix | Humans have an appendix | | The urinary bladder also opens into the cloaca since frogs do not have a urethra | Humans have a separate urethra | | The duodenum is involved in the digestion of carbohydrates, proteins, lipids and nucleic acids | Chemical digestion occurs in jejunum | | The tongue is very sticky | The tongue is not sticky |   **Similarities**  Presence of mouth  Presence of oesophagus  Presence of tongue  Presence of teeth  Presence of small intestine  Presence of liver  Presence of Gall bladder |
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