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DEPARTMENT: ANATOMY

MATRIC NUMBER: 17/MHS03/033

COURSE CODE: ANA 314

1. Comparative anatomy is the study of similarities and differences in the anatomy of different species. It is closely related to the evolution of species. It has provided evidence of common descent, and has assisted in the classification of animals.
2. The proper handling of animals is an essential part of good animal husbandry as it benefits the animals being cared for, creates a desirable working atmosphere, and also benefits the customers being served. Proper handling techniques help to maintain production quality and effectively reduce stress on animals and people. Also it reduces stress on facilities and equipments and leads to a better management of the farm or ranch involved. The criterias necessary for caring for laboratory animals are as mentioned below:
* For practical considerations due to common work hours, researchers are required to be aware of the lighting schedules used in rodent housing rooms (commonly 12hr light: 12hr dark or 14hr light: 10 hr dark) because disruption of this may cause the animals to be unsettled which may have effects on breeding performance and circadian rhythms.
* Consideration of alternatives (in vitro systems, computer simulations , and/or mathematical models) to reduce or replace the use of animals
* Design and performance of proceedures on the basis of relevance to human or animal health, advancement of knowledge, or the good of society
* The use of appropriate species, quality, and number of animals
* Avoidance or minimization of discomfort, distress, and pain
* Use of appropriate sedation, analgesia and anethesia
* The establishment of humane endpoints
* The provision of adequate vertinary care
* Provision of appropriate animal transportation and husbandry directed and performed by qualified persons
* Conduct of experimentation on living animals exclusively by or under the close supervision of qualified experienced personnel.
1. COMPARATIVE ANATOMY OF THE DIGESTIVE SYSTEM OF AMPHIBIANS

**SIMILARITIES**

|  |  |
| --- | --- |
| **AMPHIBIAN (frog)** | **MAN** |
| Mouth is present | Mouth is present |
| Presence of tongue | Presence of tongue |
| Oesophagus is present | Oesophagus is present |
| Presence of gall bladder | Presence of gall bladder |
| Presence of small intestine | Presence of small intetine  |
| Presence of large intestine | Presence of large intestine |
| Presence of teeth | Presence of teeth |
| Stomach is present | Stomach is present  |

**DIFFERENCES**

|  |  |
| --- | --- |
| **AMPHIBIAN(frog)** | **MAN** |
| Do not have strong teeth  | Have strong teeth |
| Tongue is sticky | Tongue is not sticky |
| Appendix is absent  | Appendix is present |
| During swallowing, frogs blink or close their eyes | Normal during swallowing proceedure |
| Swallow prey without chewing | Chewing is a type of mechanical digestion in humans  |
| Elimination of undigested materials occur through cloaca | Elimination of undigested materials occur through the rectum |
| Frogs have two sets of teeth maxillary teeth and vomerine teeth | Only one set of teeth in the oral cavity |
| Tip of tongue is folded backards | Tip of tongue is straight |
| Tongue is attached to the starting point of the mouth | Tongue is attached to the back of the mouth |
| Absorption of nutrients occurs in the ileum | Absorption of nutrients occurs through the jejenum |