

Mammalogy 4764 Lab Practical #1

A few words on this exam: Mean was 80, SD 10, range 61 to 94.

As I said in class, I analyze questions to see which ones were answered incorrectly and try to see why. There were 2 questions that I disallowed because term was not underlined. These two questions were essentially converted to extra credit—they did not negatively affect grade if answered incorrectly, if answered correctly was a benefit with same weight as other questions on the exam. There was one question that I accepted all answers for (35b, “agouti”) because the specimen was ambiguous with reference to the wording in the handout.

For other questions, 1 part questions were worth 1 point, 2 part questions were worth 2 points. I marked with a slash if incorrect, with a “ + ½ “ if half credit given.

I have already discussed Question 46 with a student (the cat skeleton question about a broken bone). The question average was 40%, it is one I considered treating similarly to the Extra Credit questions above. Wording on the question could have been clearer. On the other hand, I did not ask about issues of skeleton preparation (vertebrae separated, tail on board) and the broken femur was clear if one looked at the skeleton. If I were to ask that question next year I’d revise the wording.

I have comments on some questions in the key below. These comments are primarily on questions where the average score among students was < 70%.

If you’d like to discuss questions in more detail please contact me. My general philosophy on grading is that each point by itself is worth relatively little in the context of a course grade. But if a grade should be changed it can be changed, or I’ll make a note of it in grade spreadsheet in case there is a student on the border of a grade level at the end of the course.

Answer each question being as specific as possible. If in doubt give a full answer that indicates your knowledge of the question answer.

1	(a) Identify this bone: _____ Maxilla on a moose (<i>Alces alces</i>) skull. Female because no antler pedicels. (b) Is this skull from a male or female or unknown? Circle: M F U
2	What is the bone #963 is written on top of skull? _____ What is the bone #963 is written on side of skull? _____ Frontal and Parietal on a fox squirrel (<i>Sciurus niger</i>).
3	Name this bone: _____ Parietal on short-tailed shrew (<i>Blarina brevicauda</i>)
4	What has “A” written on it on this skull? _____ Occipital condyle on a deer skull (<i>Odocoileus virginianus</i>).

5	<p>What type of cheek teeth does this specimen have? _____</p> <p>Hypsodont, Rootless, Lophodont on Beaver (<i>Castor Canadensis</i>)</p>
6	<p>What stance does this species have: _____</p> <p>Does this specimen have a post-orbital bar? Y N Can't tell</p> <p>Tree shrew skeleton, plantigrade stance, yes has post-orbital bar</p>
7	<p>What bone has the letter "O" written on it? _____</p> <p>What bone has a bullet hole in it? _____</p> <p>Bison skull, lacrimal had letter "O" and frontal had bullet hole (horns always arise from frontal). I did not have lacrimal underlined so this was a bonus question—no penalty if you got it wrong, points if you got it right.</p>
8	<p>What is pointed to by the clip? _____</p> <p>Post-orbital process on a coyote (<i>Canis latrans</i>)</p>
9	<p>What is pointed to by the pointer? _____</p> <p>Bear (<i>Ursus americanus</i>) skull with pointer on zygomatic arch / jugal. Either answer taken.</p>
10	<p>What is pointed to? _____</p> <p>Flying squirrel (<i>Glaucomys volans</i>) skin with pointer on patagium. This question had average of 50%--I thought it would be higher. Many students knew what it was but not the term.</p>
11	<p>What bone is the point of the paper clip at A on? _____</p> <p>What bone is the point of the paper clip at B on? _____</p> <p>Atlas and humerus on a bobcat (<i>Lynx rufus</i>) skeleton. Atlas was not underlined so a bonus question (see Question 7).</p>
12	<p>What bone is the point of the paper clip at A on? _____</p> <p>Fibula on Primates (Bushbaby) skeleton.</p>
13	<p>What bone is pointed to by the pointer? _____</p> <p>Beaver (<i>Castor Canadensis</i>) skull with pointer on turbinal bones. Again a harder question (30% correct) but it was either right or wrong.</p>

14	<p>What kind of tooth does the arrow point to? Why? _____</p> <p>If you need to use tooth formula this is in genus <i>Castor</i>.</p> <p>Point to premolar on beaver (<i>Castor canadensis</i>) skull. – after incisor, no canines.</p>
15	<p>Based on skeletal anatomy, what type of locomotion is used by this species?</p> <p>_____ Saltatorial locomotion, rabbit (<i>Oryctolagus cuniculus</i>). This was covered in both lecture and lab, I thought would have higher than 30% correct.</p>
16	<p>What kind of tooth does the arrow point to? _____</p> <p>If needed, this skull is from the genus <i>Odocoileus</i>.</p> <p>White-tailed deer (<i>Odocoileus virginianus</i>), pointing to an incisiform canine. I checked this question throughout the exam periods. The clip was always pointing to the canine, to answer correctly one could look at the tooth formula and count incisors, or one could use discussion in both lecture and lab about deer having a lower canine that looks like an incisor. I thought would be higher than 50% correct.</p>
17	<p>What is pointed to by the clip? _____</p> <p>Armadillo with pointer at dermal bone on tail. The tail vertebrae are next to the shell, so not vertebrae, and cleaned so scales are removed. Again 50% correct.</p>
18	<p>Could you find a carnassial pair on this skull? If so, which of the numbered teeth? If not, why not?</p> <p>Beaver (<i>Castor canadensis</i>) skull with teeth numbered. No, herbivore.</p>
19	<p>What bone is being pointed to? Mole (<i>Scalopus aquaticus</i>), pointer is on scapula</p>
20	<p>What bone is being pointed to? _____</p> <p>Dog (<i>Canis familiaris</i>) skeleton, pointer is on fibula</p>
21	<p>A: What bone is pointed to? _____ Bobcat (<i>Lynx rufus</i>), palatines</p> <p>B: What bone is pointed to? _____ Muskrat (<i>Ondatra zibethicus</i>), Interparietal.</p> <p>Harder questions but seams were clearly shown on specimens. Class average was 40%.</p>
22	<p>What type of hair is pointed to?</p> <p>Vibrissae on a red squirrel (<i>Tamiasciurus hudsonicus</i>).</p>

23	What bone is pointed to on this skull? _____ <i>Otter (<i>Lutra canadensis</i>) skull with pointer on tympanic bone / Auditory bulla</i>
24	What bone is being pointed to on the skeleton? _____ <i>Primate skeleton, calcaneum (clip on ilium on other side so that taken too)</i>
25	What type of teeth are pointed to here? If needed, this skull is from the genus <i>Tayasu</i> . <i>Peccary or Javelina (<i>Tayasu tajacu</i>) skull premolars, bunodont. Need tooth formula</i>
26	How would you describe these antlers? _____ <i>Moose (<i>Alces alces</i>) antlers, palmated is what I wanted here. Took some other answers if related to antler morphology.</i>
27	What bone is label A directly over? _____ What bone is label B directly over? _____ <i>Humerus and phalanges on fruit bat (Chiroptera).</i>
28	What type of cheekteeth does this animal have? _____ <i>Rat (<i>Rattus norvegicus</i>) skull, lophodont or hypsodont.</i>
29	What bone is label A on? _____ <i>Cat skeleton (<i>Felis catus</i>), clavicle</i> What bone is label B on? _____ <i>Cat skeleton (<i>Felis catus</i>), metatarsals.</i>
30	The rostrum on this skull is: <u>broader than long</u> or <u>longer than broad</u> <i>Red fox (<i>Vulpes vulpes</i>), rostrum longer than broad.</i>
31	What type of hair is pointed to? A _____ B _____ <i>Guard hair (A) and spine (B) on a porcupine (<i>Erithazon dorsatum</i>).</i>
32	What is pointed to by the paper clip? _____ <i>Porcupine (<i>Erithazon dorsatum</i>) skull, infraorbital foramen. Typical incorrect answer was orbit, but eyes are in the hole behind. 30% answered this correctly.</i>
33	What bone has the label "A"? _____ What bone has the label "B"? _____ <i>Seal (Otariidae) skeleton: A: Radius B: Phalanges</i>

34	<p>What bone has the label “C”? _____</p> <p>What bone has the label “D”? _____</p> <p>Seal (<i>Otariidae</i>) skeleton: C: Tibia D: Ischium, pelvic girdle</p>
35	<p>What would be typical stance of this specimen, given what you can see?</p> <p>Eastern mole (<i>Scalopus aquaticus</i>), plantigrade.</p>
36	<p>What is this structure called (paper clip attached to)? _____</p> <p>Postorbital bar on a sheep (<i>Ovis aries</i>).</p>
37	<p>What is pointed to? _____</p> <p>Elk (<i>Cervus elaphus</i>) skull, sutures.</p>
35	<p>Could the pattern on this hair be termed agouti?</p> <p>No, this is deer mouse, no changes in color over hair length.</p>
38	<p>What stance does this species have? Spiny anteater (<i>Echidna</i>) with plantigrade stance</p>
39	<p>What bone is this? _____</p> <p>Deduce one thing from the teeth: _____</p> <p>Deer (<i>Odocoileus virginianus</i>) dentary, Herbivore, young animal, ...</p>
40	<p>Identify the bones the flagging tape is tied to:</p> <p>Pink: _____ Cannon bone on cow (<i>Bos taurus</i>) leg (yellow)</p> <p>Blue: _____ Fused radius and ulna on cow (<i>Bos taurus</i>) leg</p>
41	<p>Could this specimen be described as cursorial? Why or why not?</p> <p>_____</p> <p>Mink/Ermine skin, No, long and narrow body, short legs. Cursorial would be represented best by something like a wolf or deer or horse with the longer leg bones. I used that slide a couple times in lecture portion of class, and also discussed in the handout and a couple times in class—not in context of cursorial but in looking at the ungulates (cow, horse legs) and the front to back movement of limbs and less lateral flexibility.</p>

42	What type of tooth is this? _____ <i>Fisher (Martes pennanti), canine tooth.</i>
43	What is the fastest type of locomotion this specimen would use? _____ <i>Wallaby with ricochetral locomotion.</i>
44	What type of hair is taped to the paper? <i>Guard hair (awn) of moose (Alces alces).</i>
45	What is this bone labeled #1? <i>Occipital bone on a raccoon (Procyon lotor) skull.</i>
46	What bone did this specimen break? <i>Femur on a cat (Felis cattus) skeleton clearly broken and healed. Post-orbital bar broken on one side and taken too. As discussed above, this question could have been worded better and if I were to use next year wording would be changed.</i>
47	What word(s) would you use to describe these cheekteeth? <i>Cheekteeth of a white-tailed deer (Odocoileus virginianus)—Selenodont, Hypsodont</i>
48	Associate 4 of these 6 terms with specimen A or B: ____ <i>A</i> ____ Homodont ____ <i>B</i> ____ Thecodont ____ <i>A</i> ____ Polyphyodont ____ <i>B</i> ____ Heterodont ____ <i>B</i> ____ Diphyodont ____ <i>A</i> ____ Acrodont <i>Alligator is A, B is a mammal.</i>
49	Identify the bone pointed to: <i>Frontal bone on a dolphin (Delphinidae) skull</i>
50	Identify the bones the flagging tape is tied to: Pink: _____ <i>Cannon bone (Equus caballus) leg, yellow ribbon</i> Blue: _____ <i>Fused radius and ulna (Equus caballus) leg</i>
51	What is this bone labeled #1? _____ <i>Vomer on a deer (Odocoileus virginianus) skull.</i>

52	<p>What is this structure pointed to? _____</p> <p><i>Opposum (Didelphis virginiana), saggital crest.</i></p>
53	<p>Relative to other mammals, does this specimen have primitive or advanced dentition? Why? _____</p> <hr/> <p><i>Anteater (Edentata), advanced even though teeth lost is what I prefer because it is a derived condition. I allowed either answer here, and full credit was given with an explanation of why. I think even though teeth are lost it is advanced in an evolutionary context, specialized might be a better term.</i></p>
54	<p>What type of teeth does this specimen have? _____</p> <p><i>Peromyscus sp. skull on scope, lophodont, hypsodont</i></p>