

EXAM 2 - Ichthyology FALL 2005 Name _____

I. Definitions (answer 10 of 11) - SHORT ANSWERS (3 pts each)

1. Pharyngeal Jaws

2. Actinopterygii

3. Chondrichthys

4. Holocephali

5. Agnatha

6. Heterocercal

7. Hypural

8. Wallace's Line

9. Inertial suction

10. Extirpation

11. Sarcopterygii

EXAM 2 - Ichthyology Fall2005 Name _____

II. Short answer – Provide the term(s) that best describes the following definitions (2 pts):

1. _____ Fish group thought to be closest living relative of tetrapods and is a member of the _____ group of fishes.
2. _____ The name that means, literally, perfect bone and are thought to have originated in marine or freshwater and radiated into the other?
3. _____ Fish thought to have been extinct since Devonian times but caught near Madagascar in 1938. Caught numerous times around Comores Islands, South Africa and, more recently, surprisingly, Suluwesi and South Africa's east coast. True or False – They were more diverse in Devonian than today?
4. _____ Name for jawed vertebrates that means, literally, “jawed mouth”. Are they monophyletic (YES or NO)?
- 5a. _____ The most primitive jawed fishes (living or fossil).
- 5b. _____ The most primitive jawless living fish?
5. The three forms of diadromy are _____, _____ and amphidromy.
6. The Acanthopterygii are the Mugilomorpha + _____ + _____.
7. Define what a vicariance event is _____ and is more likely in marine or freshwater systems?
8. Two groups that generate weak electric currents are the _____ and the _____.
9. The Ostrariophysii includes fish defined by the presence of a _____ that enhances _____ sensory capabilities.
10. Name three of the four major Marine Zoogeographic Zones: _____, _____, and _____.
11. The Percomorpha has approximately _____ (+1000) species and the diversity is dominated by the suborder _____.
12. (1 point). True or False – Neoteleosts are defined by the emergence of a pharyngeal retractor muscle?

Bonus: In 1973, P.H. Greenwood, S. Miles and C. Patterson published an extremely influential work in the Journal Linnean Society entitled?

EXAM 2 - Ichthyology Fall2005 Name _____

III. Essay Questions - ANSWER 3 of 4 (15 Points each) – use back of page also.

1. Liem suggests that aquatic paradigms for the model of feeding ecology in vertebrates are fundamentally different from those paradigms found in terrestrial systems. Please discuss each of these models briefly and the consequences to the ecology of the organism.
2. The evolution of feeding of the Halecostomi (Amiiformes) showed three important biomechanical innovations in the feeding mechanism. Please explain these three innovations and explain how they improve the efficiency of feeding and diversity of prey items taken.
3. There are a number of characteristics that define the teleosts as a monophyletic group (mobile premaxilla, unpaired basibranchial tooth plates, carotid foramen, etc.). One of the most important is the change in the tail structure. Please discuss how the derived state of the teleost tail evolved and how this would affect locomotory skills of the fish.
4. Describe three (3) reasons for the decline of Arizona's native fish fauna and explain how each impacts native fishes.

EXAM 2 - Ichthyology Fall2005 Name _____

Identifications - please use scientific names (4 points per station)

1a. _____ 1b. _____

2a. _____ 2b. _____

3a. _____ 3b. _____

4a. _____ 4b. _____

5a. _____ 5b. _____

6a. _____ 6b. _____

7a. _____ 7b. _____

8a. _____ 8b. _____

9a. _____ 9b. _____

10a. _____ 10b. _____

11a. _____ 11b. _____

12a. _____ 12b. _____

13a. _____ 13b. _____

14a. _____ 14b. _____

15a. _____ 15b. _____

16a. _____ 16b. _____

17a – draw on back 17b. _____

18a – draw on back 18b. _____