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| Dichotomous Key |  |  |
|  |  |  |
| **Couplet Number** | **Statement Choices** | **Classification** |
| **1** | **a. Symmetry is irregular (neither bilateral or radial); aquatic; body structure without tissues or organs** | **Class Demospongiae** |
|  | **b. Symmetry is radial or bilateral**  | [2](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L9) |
| **2** | **a. Radial symmetry, lacks a well defined head** | **3** |
|  | **b. Bilateral symmetry (similar right and left body halves, anterior head end and posterior tail end)**  | [6](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L17) |
| **3** | **a. No spines or arms present**  | [4](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L13) |
|  | **b. Spines or arms present** | [5](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L15) |
| **4** | **a. Barrel-shaped body, short tentacles at one end surrounding mouth, adults attached to a substrate** | **Class Anthozoa** |
|  | **b. Saucer-shaped, transparent body with thin tentacles, free floating**  | **Class Scyphozoa** |
| **5** | **a. Five arms present, body surface knobby**  | **Class Asteroidea** |
|  | **b. Many-spined animal, resembles a pincushion**  | **Class Echinoidea** |
| **6** | **a. Animal has no apparent skeleton, or may have an exoskeleton (hard outer covering), or may have a shell; invertebrate** | [7](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L19) |
|  | **b. Animal has internal skeleton; vertebrate** | [16](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L37) |
| **7** | **a. No hard outer covering, no exoskeleton, or no shell; worm-like** | [8](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L21) |
|  | **b. Hard outer covering, exoskeleton, or shell; not worm-like** | [11](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L27) |
| **8** | **a. Body is segmented** | **Class Clitellata**  |
|  | **b. Body is not segmented** | [9](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L23) |
| **9** | **a. Body long and tubular** | **Class** Secernentea |
|  | **b. Body flattened**  | [10](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L25) |
| **10** | **a. Free living, aquatic, ribbon-like, smooth**  | **Class Turbellaria** |
|  | **b. Endoparasites (live inside host); may look segmented**  | **Class Cestoda** |
| **11** | **a. No jointed appendages** | [12](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L29) |
|  | **b. Jointed appendages** | [14](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L33) |
| **12** | **a. Soft body inside bivalve shell (hinged shell with 2 halves), no head**  | **Class Bivalvia**  |
|  | **b. Soft body, obvious head** | [13](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L31) |
| **13** | **a. May or may not have a shell; head with tentacles, small eye or eye spot** | **Class Gastropoda** |
|  | **b. Large head with tentacles and large eyes present**  | **Class Cephalopoda** |
| **14** | **a. Two pairs of antennae, large claws often present**  | **Class Crustacea**  |
|  | **b. One pair of antennae or none, no large claws**  | [15](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L35) |
| **15** | **a. Four pairs of legs, no antennae or wings**  | **Class Arachnida** |
|  | **b. Three pairs of legs, wings present**  | **Class Insecta** |
| **16** | **a. Fishlike, flattened body; appendages finlike not jointed**  | [17](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L39) |
|  | **b. Not fishlike, body not flattened, appendages jointed or absent**  | [18](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L41) |
| **17** | **a. Fish, scales on body do not overlap; skeleton of cartilage**  | **Class Chondrichthyes** |
|  | **b. Fish, scales on body overlap; skeleton bony**  | **Class Osteichthyes** |
| **18** | **a. Body covered by scales, zero or four legs**  | **Class Reptilia** |
|  | **b. Body not covered by scales**  | [19](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L43) |
| **19** | **a. Claws absent**  | **Class Amphibia** |
|  | **b. Claws or nails present on toes; skin covered with feathers or hair** | [20](file:///C%3A%5CUsers%5Cjekna%5CDocuments%5CAIU%5CSCIE206%202018%20Revision%5CSCIE206%20Rev%202018.xlsx#RANGE!L45) |
| **20** | **a. Feathered, claws present**  | **Class Aves** |
|  | **b. Hair present**  | **Class Mammalia** |