Name _____

Arachnid & Insect Classification

I. *Subphylum Chelicerata* (Chelicerates)

1. List two characteristics of Chelicerates.

1. Lack antennae 2. 6 pairs of appendages

2. Approximately how many Arachnid species exist worldwide?

100,000+ species

3. List four characteristics used to identify species of the *Class Arachnida*.

1. Two distinct body regions (cephalothorax, abdomen)
2. 4 pairs of legs
3. Lack wings + antennae
4. Simple eyes (called ocelli)

4. List four characteristics & examples of the *Order Araneae* (Spiders).

Join at narrow waist (pedicel)

1. 2 Body Regions (Cephalothorax, Abdomen) 2. Soft, unsegmented abdomen
3. Harder cephalothorax (8 legs) 4. 8 simple eyes

Examples : Orb Weavers, Cobweb Spiders, Trapdoor Spiders, Wolf Spiders, Jumping Spiders, Tarantulas

5. List four characteristics & examples of the *Order Scorpiones* (Scorpions).

1. Possess 8 legs 2. Cephalothorax + Erectile Tail
3. Tail possesses stinger 4. Pair of median eyes

Examples : Emperor Scorpion, Red Scorpion, Sand Scorpion

6. List four characteristics & examples of the *Order Acari* (Ticks / Mites).

1. Body not segmented 2. Usually 4 pairs of legs
3. Adapted mouthparts (biting, stinging, sucking) 4. 0-5 eyes

Examples : Chicken Mite, Chiggers, House Dust Mite, Brown Dog Tick, Deer Tick, Rocky Mountain Wood Tick

7. List three characteristics & examples of the *Order Opiliones* (Harvestmen).

1. Long legs to body size 2. No venom glands 3. No silk glands

Examples : Harvestmen, Daddy Longlegs, Harvesters

Name _____

II. *Subphylum Uniramia*

1. **List four characteristics of the *Class Chilipoda*** (Centipedes).

8,000 species

1. 1 pair legs per segment 2. Highly venomous
3. 30-354 legs 4. Odd number of leg pairs

2. **List four characteristics of the *Class Diplopoda*** (Millipedes).

12,000 species

1. Double-legged segments 2. Record = 750 legs
3. 20+ segments 4. Elongated cylindrical or flattened bodies

3. **Approximately how many described species of insects have been identified worldwide?**

950,000 - 1,000,000 species

4. **List six characteristics of the *Class Insecta*** (Insects).

1. Chitinous Exoskeleton 2. 3-part body 3. 3-pairs jointed legs
4. Compound Eyes 5. 1-pair antennae 6. Most diverse animal group

5. **List characteristics, importance, & examples of members of the *Order Blattodea*.**

7,000 species

1. Termites = soft-bodied, pale 2. Cockroaches = harder, dark 3. Complex social orders

Importance : Important food source (arthropods, birds, mammals)

Examples : Cockroaches, Termites

6. **List characteristics, importance, & examples of members of the *Order Coleoptera*.**

350,000 species

1. Largest order 2. Elytra = protective forewing covering 3. Forewing = hardened

Importance : Predacious / Plant-feeding species

Examples : Weevils, Lady Beetles, Long-horned Beetles, Leaf Beetles

7. **List characteristics, importance, & examples of members of the *Order Dermaptera*.**

2,000 species

1. Pair of forceps-like pincers 2. Forewings = short (rarely used) 3. Membranous wings = folded

Importance : Homeowner nuisance = unsightly in large #

Examples : Common Earwig, European Earwig, Striped Earwig

8. **List characteristics, importance, & examples of members of the *Order Diptera*.**

120,000 species

1. Single pair of flying wings 2. 2nd pair of wings = little knobs 3. Many nuisance species

Importance : Vectors of Disease (Sleeping Sickness, Malaria, Dengue Fever)

Examples : Flies, Mosquitoes, Gnats

Name _____

9. List characteristics, importance, & examples of members of the *Order Ephemeroptera.*

3,000 Species

1. Long tails 2. Wings don't fold flat 3. Triangular wings

Importance : Bioindicators of pollution / Fly-fishing models

Examples : Mayflies, Shadflies, Fishflies

10. List characteristics, importance, & examples of members of the *Order Hemiptera.*

60,000 Species

1. Forewings = thick/leathery 2. Beaked 3. Piercing, sucking mouthparts

Importance : Economically damaging / Predators / Disease vectors

Examples : Moss Bugs, Shield Bugs, Assassin Bugs

11. List characteristics, importance, & examples of members of the *Order Homoptera.*

32,000 Species

1. Similar mouthparts to Hemiptera (shorter) 2. 2 Pairs of Wings 3. Some = no wings

Importance : Economically damaging / Vector of plant diseases

Examples : Aphids, Leafhoppers, Cicadas, Planthoppers

12. List characteristics, importance, & examples of members of the *Order Hymenoptera.*

100,000 Species

1. Membranous Wings 2. Chewing mouthparts 3. Constricted Abdomen

Importance : Pollinators, Predators, Economically damaging

Examples : Bees, Ants, Wasps, Sawflies

13. List characteristics, importance, & examples of members of the *Order Lepidoptera.*

120,000 Species

1. Feathery, hooked, or clubbed antennae 2. Cocoon or chrysalis pupa 3. Stout or slender body

Importance : Economically damaging of crops, stored food, fabrics

Examples : Butterflies, Skippers, Moths

14. List characteristics, importance, & examples of members of the *Order Megaloptera.*

300 Species

1. Pleated hindwings 2. Tusk-like mandibles = attract females 3. Large, clumsy wings

Importance : Predacious Scavengers

Examples : Alderflies, Dobsonflies, Fishflies

15. List characteristics, importance, & examples of members of the *Order Neuroptera.*

6,000 Species

1. 4 membranous wings 2. Highly veined wings 3. Chewing mouthparts

Importance : Predacious / Biological population control agent

Examples : Lacewings, Antlions, Mantidflies

Name _____

16. List characteristics, importance, & examples of members of the *Order Odonata.*

5,000 species

1. 2 pairs elongated wings 2. Long-bodied 3. Good vision

Importance : Predators of mosquitoes gnats, flies

Examples : Dragonflies, Damselflies

17. List characteristics, importance, & examples of members of the *Order Orthoptera.*

20,000 species

1. Jumping Insects 2. 2 veined wing pairs 3. forewings = long, narrow

Importance : Damaging plant feeders / Large migration numbers

Examples : Grasshoppers, Katydids, Crickets, Mantids, Walking Sticks

18. List characteristics, importance, & examples of members of the *Order Plecoptera.*

3,500 species

1. Braided Wings 2. Robust legs with claws 3. Long paired cerci on abdomen tips

Importance : Water quality indicators / Some lifespans entirely aquatic

Examples Common Stoneflies, Spring Stoneflies, Rolled-winged Stoneflies, Small Winter Stoneflies

19. List characteristics, importance, & examples of members of the *Order Siphonaptera.*

2,500 species

1. Flightless 2. External Blood Parasites 3. Mouthparts = piercing, sucking

Importance : Animal Pest (mammals, birds) / Disease Vector

Examples : Cat Fleas, Dog Fleas, Human Fleas, Chicken Fleas

20. List characteristics, importance, & examples of members of the *Order Thysanoptera.*

6,000 species

1. Minute-sized (small) 2. Fringed Wings 3. Asymmetrical, sucking mouthparts

Importance : Commercial Crop Pests / Pollinators / Predators → mites

Examples : Greenhouse Thrips, Western Flower Thrips, Gladiolus Thrips

21. List characteristics, importance, & examples of members of the *Order Trichoptera.*

14,500 species

1. Aquatic Larvae 2. Protective Portable Casings 3. Some small + moth-like

Importance : Water Quality Indicator / Prey (birds, bats, trout)

Examples : Caddisflies, Sedgeflies, Rainflies