Name _____(1) Intro to Applied Entomology, Exam 1, 2015

1. _____ Which of the following is NOT true about the insect circulatory system? (1)

   A. It is comprised of a dorsal heart and anterior aorta.
   B. Insect "blood" is called hemolymph.
   C. The circulatory system delivers oxygen and removes carbon dioxide.
   D. It is an "open" circulatory system.

2. _____ True or false? Some insects, including aphids, give birth to live young, and females may reproduce without mating. (1)

3. The following terms are used to classify insects and other organisms. Number them in order from broadest and most general = 1 to narrowest and most specific = 6. (3 points)

   _____ class
   _____ genus
   _____ order
   _____ species
   _____ phylum
   _____ family

4. _____ In which of these orders are all species wingless? (1)

   A. Odonata
   B. Orthoptera
   C. Phthiraptera
   D. Dermaptera

5. _____ The suborders Adephaga and Polyphaga in the order Coleoptera are distinguished by: (1)

   A. whether or not they can fly
   B. the number of tarsal segments (tarsomeres) on the hind legs
   C. the form of their antennae
   D. the structure and appearance of the hind coxae and trochanters

Why does this matter? Why would you want to know if an insect found on a plant is a beetle in the suborder Adephaga? (1)

6. _____ The front and hind wings of winged adults in the Hymenoptera are held together in flight by hook-like structures called (1)

   A. crochets
   B. elytra
   C. halteres
   D. hamuli

7. Define / describe the following terms: (2 points each)

pronotum

trachea

parthenogensis

pheromone

polyembryony

furculum

cantharadin

multivoline

crochet

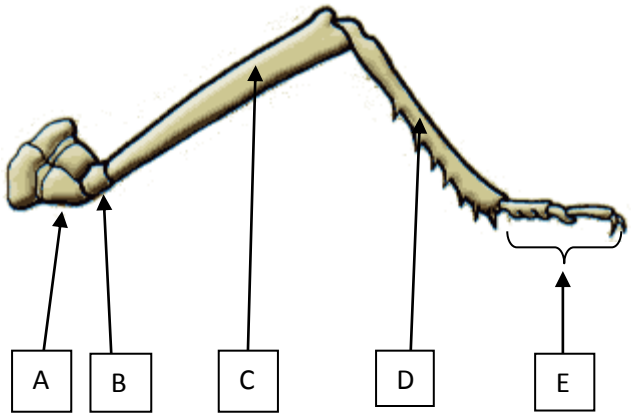
diapause

8. In which suborder of Hemiptera do ALL species feed on plants? (There are NO predaceous or parasitic species in this suborder.) (1)

_____

9. Identify two ways in which Hymenopterans in the suborder Symphyta differ morphologically from Hymenopterans in the suborder Apocrita. You may use adult and/or immature characteristics. (2)

Symphyta	Apocrita



10. For the diagram of an insect leg above, identify the five segments labeled A-E. (5)

A. _____

B. _____

C. _____

D. _____

E. _____

11. It is sometimes suggested that complete metamorphosis provides for a dramatic "division of labor" for immature versus adult insects. If this is true, what is the "job" for adult insects? (1)

_____

And what is/are the job(s) for larvae of these insects? (1)

_____

12. Identify two ways in which the Heteroptera differ from the Homoptera. (2)

13. Indicate true (T) or False (F) for each of the following statements: (4)

_____ Adults in the order Lepidoptera have sucking or siphoning mouthparts.
_____ Adult wasps have sucking or siphoning mouthparts.
_____ Adults in the order Diptera have sucking or siphoning mouthparts.
_____ Adults in the order Isoptera have sucking or siphoning mouthparts.

14. Indicate true (T) or False (F) for each of the following statements: (4)

_____ Adults in the order Hymenoptera have chewing mouthparts.
_____ Adults in the order Orthoptera have chewing mouthparts.
_____ Adult fleas have chewing mouthparts.
_____ Adults in the order Hemiptera, suborder Heteroptera, have chewing mouthparts.

15. Define each of the following terms. Be specific enough that your definitions distinguish each term from the others. (5)

A. metamorphosis

B. ametamorphosis

C. gradual metamorphosis

D. incomplete metamorphosis

E. complete metamorphosis

16. For each of the following orders, give the common name, identify the type of metamorphosis that occurs in that order (one of the types listed in 15 B-E), and what term is used when referring to the active immature stages of that order (choose one of: juvenile, nymph, naiad, or larva). (15)

Order	Common Name	Type of Metamorphosis (choose one of: ametamorphosis, gradual, incomplete, or complete)	Term used for Immatures (choose one of: juvenile, nymph, naiad, or larva)
Orthoptera			
Coleoptera			
Diptera			
Collembola			
Odonata			

17. Give the common name for each of the following family names. (10) (14 opportunities to get 10 correct; extra credit is possible.)

Scientific Name	Common Name	Scientific Name	Common Name
Formicidae		Acrididae	
Gryllidae		Aleyrodidae	
Miridae		Aphididae	
Papilionidae		Apidae	
Pentatomidae		Carabidae	
Culicidae		Cicadellidae	
Vespidae		Elateridae	

18. Use the letters for the orders listed on the right to answer or complete the questions or statements on the left. **Note that more than one answer is required in some blanks and that letters on the right may be used once, more than once, or not at all.** (24)

_____Identify the order which contains a species that transmits the bacteria that cause epidemic typhus.

_____Identify the order which contains a genus that transmits the pathogen that causes malaria.

_____Identify the order which larvae of a major group are legless, with hook-like mouthparts and no true head capsule.

_____Identify 3 orders in which the forewings are leathery and called tegmina. (There are more than 3 in this category, but list only 3.)

_____Identify 2 orders which contain social species in which castes with different physical forms and roles are found.

_____Identify 2 orders in which all species, as adults, are blood-feeding (or lymph-feeding) parasites on vertebrate animals.

_____Identify 3 orders in which the immatures of all species are aquatic.

_____Which order contains the caddisflies?

_____In which order are insects with feather-like, fringed wings common?

_____Which order is characterized by forceps-like (= pincer-like) cerci at the rear of the abdomen?

_____Identify 8 orders in which adults have chewing mouthparts. (There are more than 8 in this category, but list only 8.)

A	Blattaria
B	Coleoptera
C	Dermaptera
D	Diptera
E	Ephemeroptera
F	Hemiptera
G	Hymenoptera
H	Isoptera
I	Lepidoptera
J	Mantodea
K	Neuroptera
L	Odonata
M	Orthoptera
N	Phasmida
O	Phthiraptera
P	Siphonaptera
Q	Thysanoptera
R	Thysanura
S	Trichoptera

Lecture Exam 1 word list

Abdominal prolegs
Acrididae
Adephaga
Aedeagus
Aggregation
Aleyrodidae
Allomone
Ametamorphosis
Anisoptera
Anoplura
Ants
Antenna
Aorta
Aphidae
Aphids
Apocrita
Arachnida
Armyworms
Arthropod
Assassin bugs
Axon (axonic transmission)
Bark beetles
Barklice
Bed bug
Big-eyed bug
Bilateral symmetry
Biting lice
Blattaria / Blattodea
Blister beetles
Body louse
Booklice
Bookworm
Brachycera
Bristletails
Busprestidae
Butterflies
Caddisflies
Carabidae
Castes
Caudal filaments
Cecidomyiidae
Cerambycidae
Cerci
Chelicerata
Chilopoda
Chinch bug
Chitin
Chrysomelidae
Cicadas
Cicadellidae
Cicadidae
Cicindelinae
Cimicidae
Class
Clearwing moths
Click beetles
Coccinellidae
Coccoidea
Cockroaches
Codling moth
Coleoptera
Collembola
Collophore
Colorado potato beetle
Common green lacewing
Complete metamorphosis
Compound eye
Coreidae
Corn rootworms
Corn earworm
Cornicles
Coxa
Crickets
Crochets
Crop
Culicidae
Cuneus
Curculionidae
Cuticle
Cutworms
Damsel bugs
Damselflies
Damselsindistress
Dermaptera
Dermestidae
Desert locust
Diapause
Diplopoda
Diptera
Dog breath
Dorsal vessel
Dorsal
Earwig
Ear ring
Eastern flower thrips
Ecdysone
Elateridae
Elytron (elytra)
Ephemeroptera
Esophagus
European corn borer
Family
Femur
Firebrat
Fireflies
Flea beetles
Foregut
Forest tent caterpillar
Froghoppers
Furcula
Ganglion (ganglia)
Gastric caeca
Gastric distress
Genus
Giant silkworm moths
Gradual metamorphosis
Grape phylloxeran
Grasshoppers
Green Giant
Green stink bug
Gryllidae
Gryllotalpidae
Gypsy moth
Hair-like thoracic gills
Halter (halteres)
Haplo-diplo sex determination
Harlequin bug
Hawk moths
Head louse
Hemelytron (hemelytra)
Hemiptera
Heteroptera
Hindgut
Homoptera
Hornworms
Hypognathous
Hypopharynx
Incomplete metamorphosis
Indian meal moth
Insect
Instar
Isoptera
Japanese beetle
Juvenile delinquent
Juvenile hormone
Kairomone
Katydids
Labium (labia)
Labrum
Lady beetles
Lampyridae
Larva
Lasiocampidae
Leaf beetles
Leaf-footed bugs
Leafhoppers
Leaflike gills
Lepidoptera
Long-horned beetles
Lygaeidae
Lymantriidae
Mallophaga
Malpighian tubule(s)
Mandible
Mantodea
Mantids
Mating disruption
Maxilla(e)
Mayflies
Meloidae
Mesothorax
Metallic wood borers
Metathorax
Midgut
Midwest
Minute pirate bugs
Miridae
Monarch Butterfly
Moths
Multivoltine

Nabidae
Naiad
Nematocera
Neurotransmitter
Noctuidae
Nymph
Nymphalidae
Ocellus (ocelli)
Odonata Dragonflies
Onion breath
Onion thrips
Order
Orthoptera
Ovipositor
Papilionidae
Parasites
Parthenogenesis
Pentatomidae
Phasmida
Pheromone
Phthiraptera
Phylloxeridae
Phylogeny
Phylum
Pieridae
Plant bugs
Plecoptera
Polyembryony
Polyphaga
Prognathous
Prothorax
Protrura
Psocoptera
Psyllidae
Pubic louse (crab louse)
Pupa
Pyralidae
Rectal gills
Reduviidae
Rove beetles
San Jose scale
Saturniidae
Scale insects
Scarabeidae
Sclerite
Scolytinae
Seed bugs
Semiochemical
Sesiidae
Silverfish
Siphonaptera
Skin beetles
Species
Spermatheca
Spermatophore
Sphingidae
Spined soldier bug
Spineless wonder
Spiracle
Spittlebugs
Springtail
Spruce budworm
Squash bug
Staphylinidae
Stemmata
Stigma
Stink bugs
Stoneflies
Stridulation
Sucking lice
Symphyta
Synapse (synaptic transmission)
Syrphidae
Systematics
Tabanidae
Tachinidae
Tarsus
Taxonomy
Tegmina
Tenaculum
Tent caterpillars
Termite
Tettigoniidae
Thrips
Thysanoptera
Thysanura
Tibia
Tortricidae
Trachea(e)
Treehoppers
Trichoptera
Trochanter
True bugs
Tussock moths
Univoltine
Ventral
Ventral nerve cord
Walking sticks
Weevils
White grubs
Whiteflies
Wireworms
Zygoptera