# Zoo201 final term subjective

## Fall 2022 by

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### *Garden centrepeds*

• Members of the class Symphyla (sim-filah) (Gr. Sym, same phyllos, leaf) are small arthropods (2 to 10 mm in length) that occupy soil and leaf mold, superficially resemble centipedes, and are often

Called garden centipedes.

### *Do insect have memory*

• Research has demonstrated that insects are capable of some learning and have a memory.

• For example, bees (order Hymenoptera) instinctively recognize flowerlike objects by their shape and ability to absorb ultraviolet light, which makes the center of the flower appear dark.

### *Mating behavior of insects*

• Most insects have complex mating behaviors for locating and recognizing a potential mate, for positioning a mate for copulation, or for pacifying an aggressive mate.

• Mating behavior may involve pheromones (moths, order Lepidoptera), visual signals (fireflies,

Order Coleoptera), and auditory signals (cicadas, order Homoptera; and grasshoppers, crickets, and katydids, order Orthoptera)

• Once other stimuli have brought the male and female together, tactile stimuli from the antennae and other appendages help position the insects for mating.

• Mating behavior starts by locating mates.

• Male and female have different strategies toward copulation and reproduction.

• After locating mates is courtship; one male and female have encountered each other, they may

Proceed directly to copulation or may first engage in various rituals, collectively known as

Courtship. • The final ritual is copulation.

***Nervous system of star fish***

• The nervous system of sea stars consists of a nerve ring that encircles the mouth and radial nerves That extend into each arm.

• Radial nerves lie within the ambulacral groove, just

Oral to the radial canal of the water-vascular system

And the radial strands of the hemal system.

• Radial nerves coordinate the functions of tube feet.

• Other nervous elements are in the form of a nerve net associated with the body wall.

• The nervous system of the starfish is very simple,

There is no brain and there are not even any ganglia

To coordinate movement.

***Ectotherms***

• Many insects are ectotherms (animals in which their heat source is primarily from the

Environment)

***Hetrotherms***

• Heterothermy (“hetero”, different) occurs in animals which are able to switch from endothermy to ectothermy.

***Sea star phylum***

Phylum echinodermata.

## *Aristotle lanterns in econoids*

• A chewing apparatus, called Aristotle's lantern, can be projected from the mouth.

• It consists of about 35 ossicles and attached muscles and cuts food into small pieces for ingestion.

• The mouth cavity leads to a pharynx, an esophagus, and a long, coiled intestine that ends aborally at the anus.

• The teeth of Aristotle's lantern are typically extruded to scrape algae and other food from rocks, and some urchins can excavate hiding places in coral or rock even in steel.

## Skeleton of sea urchin

Sea urchins (Echinoidea) have the most developed skeleton, consisting of heavy test (shell) and spines. The common feature of such skeletons is a calcite crystals immersed in dermis and covered with epidermis [3,4]. Besides mineral component, spines contain glycoproteins, providing them some mechanical flexibility

## Complete metamorphosis

is the type of insect development that includes egg, larva, pupal, and adult stages, which differ greatly in morphology. The lifecycle of butterflies, ants, fleas, bees, beetles, moths, and wasps are examples of the complete metamorphosis.

## Mutualism and parasitism

Mutualism is a symbiotic interaction in which both species benefit from the relationship. But, parasitism is another type of symbiotic interaction in which the parasite benefits on the expenses of the host. Both species are involved in the interaction live in the same habitat

## Central nerve system

Like most other arthropods, insects have a relatively simple central nervous system with a dorsal brain linked to a ventral nerve cord that consists of paired segmental ganglia running along the ventral midline of the thorax and abdomen

## Hemal system of echinoderms.

In echinoderms, the blood vascular system is called hemal system, which is poorly developed in star fish and plays little role in circulation. The system consists of small fluid-filled sinus-channels that lack a distinct lining. The haemal channels are actually intercommunicating spaces and are not true blood vessels

## Sea cucumbers

are echinoderms from the class Holothuroidea. They are marine animals with a leathery skin and an elongated body containing a single, branched gonad. Sea cucumbers are found on the sea floor worldwide

3• The sea stars

make up the class Asteroidea (Gr

## Sea Daisy.

The class Concentricycloidea (ME consentrik, having a common center and Gr. Kykloeides, like a Circle) contains a single described species, known as the sea daisy.

• Sea daisies have been recently discovered on debris in deep oceans.

## Tympanal organs

consist of a thin, cuticular membrane covering a large air sac.

• The air sac acts as a resonating chamber.

• Just under the membrane are sensory cells that detect pressure waves.

• Grasshopper tympanal organs can detect sounds in the range of 1,000 to 50,000 cps.• The human ear can detect sounds between 20 and 20,000 cps.

## Hydra.

Hydra is a common freshwater hydrozoan that hangs from the underside of floating plants in clean

Streams and ponds.

• Hydra lacks a medusa stage and reproduces both asexually by budding from the side of the polyp and

Sexually.

### Bipinnaria and brachiolaria larva difference.

Bipinnaria is the first stage in the larval development of most starfish, and is usually followed by a brachiolaria stage

brachiolaria is the second stage of larval development in many starfishes it follows the bipinnaria. Brachiolaria have bilateral symmetry, unlike the adult starfish, which have a pentaradial symmetry.

### Polyphyletic origin .

of these groups implies convergent evolution of remarkably similar

Arthropodan features in all three (or at least two of three) phyla of Arthropods.

The circulatory system of the arachnids.

is an open system with hemolymph circulating in tissue sinuses. Special venous channels conduct hemolymph from the tissues to the heart, from which it is pumped through a series of blood vessels back to the sinuses

### Malpighian tubules .

are slender tubes normally found in the posterior regions of arthropod alimentary canals. Each tubule consists of a single layer of cells that is closed off at the distal end with the proximal end joining the alimentary canal at the junction between the midgut and hindgut

### pedicellaria (plural: pedicellariae)

is a small wrench- or claw-shaped appendage with movable jaws, called valves.

• Each pedicellaria is an effector organ with its own set Of muscles, neuropils, and sensory receptors and is therefore Capable of reflex responses to the environment.

### Cycliophore asexually reproduction.

• It can reproduce asexually by producing a larva stage, called

The pandora, that is released and settles on the same host.

### describe bivalve internal fertilization

Sperm is drawn into a female's gills with the inhalant water and internal fertilization takes place. The eggs hatch into glochidia larvae that develop within the female's shell. Later they are released and attach themselves parasitically to the gills or fins of a fish host.

### (Locomotion in Sea Cucumber)

• Sea cucumbers are mostly sluggish burrowers and creepers, although some swim by undulating their Bodies from side to side.

• Locomotion using tube feet is inefficient, because the tube feet are not anchored by body wall Ossicles.

• Locomotion more commonly results from contractions of body-wall muscles that produce wormlike, Locomotor waves that pass along the length of the body.