Characteristics typical of annelids are
A) segmentation, open circulation, and nephridia.
B) segmentation, a closed circulatory system, and nephridia.
C) an exoskeleton, nephridia, and a pseudocoelom.
D) an exoskeleton, Malpighian tubules, and a pseudocoelom.
E) nephridia, a true coelom, and open circulation.

2) A robin has difficulty pulling an earthworm from its earthen burrow because of small chitinous bristles called
A) parapodia.
B) metameres.
C) annuli.
D) nephridia.
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3) Many polychaetes are euryhaline meaning that they
A) can tolerate a wide range of salinity.
B) must live in marine conditions.
C) possess both male and female reproductive organs.
D) always live in tubes.
E) lack any circulatory system.

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7) Chelicerate arthropods possess
A) pedipalps.
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C) mandibles.
D) three pairs of walking legs.
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8) Members of the class Arachnida have
A) a cephalothorax and abdomen.
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9) How do spiders eat?
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12) Scorpions
A) feed during the day.
B) are most common in the temperate areas of the world.
C) are docile animals that, in spite of their reputation, cannot harm humans.
D) are sensitive to surface waves produced by movement on the ground.
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A) They possess a telson tail.
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D) Only Crustacea possess a two-part body plan of cephalothorax and abdomen.
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E) a body divided into two regions, the cephalothorax and abdomen.
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C] The heart does not pump hemolymph but it moves by ciliary action instead.
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18] The respiratory apparatus of a crayfish is

A] a set of gills under the carapace.
B] book lungs inside the carapace.
C] a set of gills along the underside of the tail.
D] tracheal tubes throughout the body.
E] a cluster of alveoli under the tail.

17] What is the function of the green glands in the crayfish?

A] secrete fluids to aid digestion
B] increase oxygen absorption for respiration
C] sensing vibrations in water
D] reproduction
E] excretion

18] Chilopods = centipedes

A] are herbivorous.
B] have poison claws.
C] have five pairs of legs.
D] use gills for respiration.
E] are parthenogenetic and always oviparous.

19] The millipedes

A] bear two pairs of legs on most body segments.
B] are very beneficial because they feed on insects.
C] are more active than centipedes because they have more legs.
D] have flattened bodies in contrast to centipedes.
E] lack spiracles and tracheae and therefore differ from centipedes.

20] The class Hexapoda

A] has more species than any other group of animals.
B] is of major medical importance to humans.
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23] When an insect lays its eggs on a host, and the developing larvae feed on the host, it is called:

A] a hyperparasite.
B] phytophagous.
C] saprophagous.
D] hyperpredaceous.
E] parasitoid.

24] How is an insect circulatory system best described?

A] The open system uses a dorsal aorta and accessory pulsatory organs to push hemolymph through the body cavities and wings, etc. but the hemolymph has little respiratory function.
B] The system is totally closed like ours with arteries and veins and the ameobocytes aid in respiratory function.
C] The system is similar to ours with general closed sinuses but no distinct arteries and veins.
D] A circulatory system is totally absent and each body cell is on its own to gain food and get rid of wastes.
E] None of the above is correct.

25] Which is an advantage(s) of a more complex form of metamorphosis where an adult is very different from the larvae?

A] This would allow an insect species to exploit two different food sources.
B] An insect could evade a predator specialized for one stage.
C] It allows an insect to overwinter in resistant stage.
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A] the fact that it has a stinging proboscis.
B] a natural bad taste possessed by all butterflies.
C] a toxic chemistry acquired from ingesting milkweed cardenolids when it was a caterpillar.
D] mimicry of another butterfly that has a bad taste.
E] orange pigments that are always toxic, which is why orange animals are always protected.

27] What features are NOT held in common by deuterostomes?

A] mouth develops from or near the blastopore
B] coelom budded off from the archenteron
C] radial and regulative cleavage
D] mesoderm derived from or with the endoderm from enterocoelic pouches
E] None of the above are deuterostome features
29. B  33. D  37. C
30. D  34. A
31. A  35. E
32. A  36. C
33. A  39. E
34. D  40. E
The lateral line of a shark is used for
A) detecting and locating objects and moving animals in the water.
B) excretion of urea and water.
C) detecting odors.
D) secreting mucus as a swimming lubricant.
E) detecting the heat of prey animals.

42) Sharks have ______ scales.
A) placoid
B) ctenoid
C) cycloid
D) ganoid
E) polyplid

43) What feature(s) separates a shark from a bluegill (sunfish)?
A) operculum versus gill slits
B) cartilage versus bones
C) internal versus external fertilization
D) no swim bladder versus swim bladder
E) All of the above are correct distinctions.

44) The term "tetrapods"
A) forms a monophyletic unit.
B) includes the amphibians and amniotes.
C) does not include the fish.
D) includes humans.
E) All of the above are correct.

The double circulation of tetrapods consists of a ______ circulation serving the body and a pulmonary circulation serving the lungs.
A) respiratory
B) thoracic
C) cardiac
D) abdominal
E) systemic

45) Amphibians were the first vertebrate invaders of land. but most still must return to the water to
A) breed.
B) breathe.
C) feed.
D) excrete.
E) metamorphose.

47) Most terrestrial salamanders fertilize eggs by
A) internal fertilization after the female has picked up spermatophores deposited by the male in the environment.
B) external fertilization in the water similar to fish.
C) internal fertilization by copulation with a male.
D) external fertilization in the water similar to frogs utilizing amplexus.
E) None of the above is correct.

49) To separate a legless (gloss) lizard from a real snake, you could look for
A) ear openings on the lizard, missing in snakes.
B) rough scales on lizards, smooth scales on snakes.
C) lizards at night, snakes in the daytime.
D) lizards in trees, snakes on the ground.
E) All of the above are differences between lizards and snakes.

50) The tuatara
A) is found in southwestern United States.
B) is snakelike in its features.
C) is the only surviving dinosaur relative.
D) has a well developed parietal eye.
E) All of the above are correct.

amphibians - external
uricola - internal
gymnophiona

crocs - teeth (2 directions) after
aligator - teeth down close

41 A
42 A
43 E
44 E
45 E
46 A
47 A
48 C
49 A
50 D
1) Snails that lack gills are called "pulmonate," and their mantle cavity functions
   A) to produce pearls
   B) as a lung
   C) to store wastes
   D) for propulsion
   E) all of the above

2) The largest eyes in the animal kingdom are found in the
   A) the giant octopus
   B) the giant squid
   C) the blue whale
   D) marty feldman
   E) the sperm whale

3) Which of the following have an closed circulatory system?
   A) snails
   B) spiders
   C) beetles
   D) squid
   E) centipedes

4) The eyes of vertebrates and cephalopods represent an example of
   A) homology
   B) intelligent design
   C) convergence
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5) Characteristics typical of annelids are
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   A) sessile throughout their life cycle.
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   D) isopods.
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   A) are herbivorous.
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32) Velvet ants are
   A) eusocial ants
   B) in the order Hemiptera
   C) in the order Hymenoptera
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33) An insect with two wings, and a pair of halteres would be in the order:
   A) Hemiptera
   B) Orthoptera
   C) Coleoptera
   D) Diptera
   E) Lepidoptera

orthoptera - grass hoppers, crickets, mantids
hymeno - bees, wasps, ants
hemi - true bug, ass. bug, toe biter
homo - leaf hoppers, cicadas
iso - termites w/ protzoan symbionts
dip - wings w/ 2 halteres
lipi - butterflies & monarch
coelo - June beetles, lady bugs
1) In cuttlefish, the shell is reduced to a structure used for flotation, called the
A) siphuncle
B) periostracum
c) cuttlebone
d) pen
e) radula

2) The largest eyes in the animal kingdom are found in
A) the giant octopus
B) the giant squid
C) the blue whale
D) marty feldman
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3) Which of the following have an open circulatory system?
(bubble all that apply)
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21) Horseshoe crabs have chelate limbs. This means the limbs are:
A) uniramous
B) ignoramous
C) polyramous
D) like pincers
E) bent at the ends

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27) Insect wings are

A) usually four in number.
B) attached to the thorax.
C) absent in some groups.
D) fixed in the Odonata, dragonflies
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31) Among mormon butterflies, many distasteful species look very similar. This is an example of:

A) Batesian mimicry
B) Müllerian mimicry
C) Nelsonian mimicry
D) aposematic coloration
E) crypsis

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33) An insect with two wings and a pair of halteres, that undergoes complete metamorphosis would be in the order:

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34) Hemipterans: true bugs

A) are all plant eaters
B) usually have sucking mouthparts
C) possess elytra
D) have four often brightly colored wings
E) are harmless to humans

35) In a haplodiploid society

A) sex is determined by a pair of chromosomes
B) males usually exist in the largest numbers
C) most females are reproductively active
D) females are most closely related to their sisters
E) males are most closely related to their fathers