

2009 4-H MARINE ECOLOGY EVENT

SECTION 5: MULTIPLE CHOICE STUDY QUESTIONS

SENIOR LEVEL (14-18 years old)

MARINE PLANTS

1. Which of the following statements is true?
 - a. all seaweed is algae
 - b. all algae is seaweed
 - c. Rhodophyta is the phylum name for green algae
 - d. seaweeds have true roots, stems, and leaves like other plants
2. Which statement is NOT true about red algae?
 - a. It is capable of photosynthesis
 - b. It is the only alga that has true roots.
 - c. The scientific name for the red algae phylum is Rhodophyta.
 - d. An example is *Gracilaria*
3. A type of algae that has air bladders to help it float is called
 - a. gulfweed (*Sargassum*)
 - b. sea lettuce (*Ulva*)
 - c. *Gracilaria*
 - d. shoal grass
4. Plants use sunlight and nutrients to make food. They are called...
 - a. consumers
 - b. omnivores
 - c. plantopaths
 - d. producers
5. Which of the following is an example of green algae?
 - a. Sargassum weed
 - b. Petticoat algae
 - c. *Gracilaria*
 - d. Shaving brush algae
6. Turtle grass is
 - a. a recommended grass for stabilizing beaches
 - b. a grass that is eaten by blue herons
 - c. a grass found in bays and lagoons in warmer climates
 - d. a sea grass with cylindrical or round blades
7. Which plant has stilt-like prop roots?
 - a. white mangroves
 - b. red mangroves
 - c. buttonwood
 - d. black mangroves

8. Sargassum weed
- a. is a highly edible sea weed and often used in sushi
 - b. is found attached to rocks in shallow tidepools
 - c. provides a floating home for many marine animals
 - d. is only found in the Florida Keys

MARINE INVERTEBRATES

9. Which of the following is NOT true of sponges?
- a. Their body contains lots of holes called pores
 - b. They possess special muscles for movement
 - c. They have collar cells
 - d. They come in many shapes, sizes, and colors
10. Which group below includes cnidarians?
- a. sea stars, sea urchins, sea biscuits.
 - b. sharks, rays, and skates
 - c. sea anemones, corals, jellyfish
 - d. shrimp, crabs, lobsters
11. Which of the following is NOT true of cnidarians?
- a. They have stinging cells
 - b. They have radial symmetry
 - c. They have only one opening into their body
 - d. They have gills to help them breathe
12. Comb jellies
- a. are not jellyfish
 - b. have adhesive cells to capture prey
 - c. are transparent
 - d. all of the above are true
13. The structure in a mollusk that produces/secretes the shell is called the
- a. mantle
 - b. foot
 - c. gills
 - d. siphon
14. Mollusks that have two shells are called:
- a. univalves
 - b. polyvalves
 - c. laterals
 - d. bivalves
15. Which of the following is a gastropod?
- a. a squid
 - b. a flat worm
 - c. a conch
 - d. an oyster

16. The following animals are marine annelids
 - a. sharks, rays, and skates
 - b. shrimp, crabs, lobsters
 - c. bristle worm, Christmas tree worm, spaghetti worm
 - d. sea stars, sea urchins, sea biscuits

17. Barnacles are placed in the group called:
 - a. mollusks
 - b. anenomes
 - c. bivalves
 - d. arthropods

18. Arthropods are animals that have:
 - a. backbones and lungs
 - b. an exoskeleton and segmented body
 - c. a shell and radial symmetry
 - d. none of the above

19. A soft-shelled crab is...
 - a. a crab found in freshwater lakes
 - b. only found in restaurants
 - c. a crab that has recently shed its exoskeleton
 - d. a crab that is too soft to eat

20. How is a horseshoe crab different from a real crab?
 - a. it is found in saltwater
 - b. it has compound eyes
 - c. it has a shell
 - d. it has several pairs of claws versus just one pair

21. A male fiddler crab uses his big claw :
 - a. for preying on food
 - b. to help him climb up marsh grass
 - c. to attract potential mates by waving at them
 - d. for digging holes in the mud

22. The process of molting in a crab is related to the life function of
 - a. growth
 - b. reproduction
 - c. digestion
 - d. respiration

23. The word "echinodermata" means:
 - a. stinging animal
 - b. hollow intestine
 - c. spiny skinned
 - d. flattened body

24. Which of the following is an echinoderm?
- coral
 - crab
 - sea urchin
 - skate
25. Which of the following is in the phylum Chordata?
- octopus
 - shark
 - sea star
 - coral
26. Chordates are animals that contain
- gills, fins, and scales
 - notochord, gill slits, dorsal nerve chord
 - ventral nerve chord, scales, and brain
 - backbone, ventral nerve chord, gill slits
27. Ampullae of Lorenzini
- help sharks digest their food
 - help fish to swim
 - are nerve receptors on the shark's snout
 - help sharks maintain their buoyancy
28. Sharks and rays are different from other fish, such as snappers and groupers, because sharks have:
- gills
 - cartilage instead of bones
 - fins
 - a bony jaw
29. An example of a fish that is found along the shallows of a sandy beach is the
- grouper
 - pompano
 - snapper
 - sailfish
30. A fish breathes by
- taking in water through the mouth and passing it over the gills
 - taking in water through the gills and passing it over the mouth
 - taking in water through the gills on one side of the body and passing it through to the gills on the other side
 - fanning water into the gills with the pectoral fins
31. Most bony fish maintain their neutral buoyancy by using their
- scales
 - fins
 - swim bladder
 - lateral line

32. The part of a fish that can detect vibrations in the water is the
- operculum
 - scale
 - gill raker
 - lateral line
33. Green sea turtles nest:
- in salt marshes
 - on mangrove islands
 - on sandy beaches
 - on rocky shores
34. Marine turtles possess all of the following adaptations EXCEPT:
- streamline body
 - flipper-like limbs
 - fatty deposits for buoyancy
 - gills
35. Which bird obtains its food by diving head first into the water?
- an eagle
 - a pelican
 - a roseate spoonbill
 - a plover
36. Sea mammals, such as whales, can dive deep and long because
- they can direct their oxygenated blood to just the more vital organs
 - they have more red blood cells and therefore can hold more oxygen
 - they can slow their heart rate down
 - all of the above
37. Manatees are actually distant relatives of the
- elephant
 - cow
 - horse
 - sea lion

PLANKTON

38. Dinoflagellates
- are types of phytoplankton
 - use flagellum for sideways motion.
 - can cause a red tide when in large numbers
 - all of the above
39. Microscopic phytoplankton include...
- arrow-worms
 - diatoms
 - comb jellies
 - copepods

40. Common, one-celled zooplankton are:
- a. radiolaria and foraminifera
 - b. copepods and arrow-worms
 - c. dinoflagellates and diatoms
 - d. *Gracilaria* and *Sargassum*
41. The shell of a diatom is called a
- a. frustule.
 - b. girdle
 - c. exoskeleton
 - d. flagellum
42. An abundant planktonic crustacean that is important in the ocean food chain is the
- a. crab
 - b. barnacle
 - c. diatom
 - d. copepod
43. Meroplankton...
- a. are fast swimming plankton
 - b. are planktonic for their entire life
 - c. are only planktonic for a part of their life
 - d. are benthic forms of plankton
44. Which of the following is an example of holoplankton?
- a. sea urchin
 - b. jellyfish
 - c. sea slug
 - d. sea whip

MARINE HABITATS/ECOSYSTEMS

45. The composition of Florida's beach sand
- a. varies with location of the beach
 - b. comes from volcanic sources
 - c. is the same on all beaches.
 - d. changes with the season
46. Sand dunes are important to us for geological and ecological reasons. These reasons include:
- a. They provide a great place for humans to build nature and walking trails
 - b. They protect the land behind it from storm waves and wind
 - c. They provide a solid foundation for the building of beach homes
 - d. They offer us a fun place to drive ATVs on
47. Which plant could be used to help prevent beach/dune erosion?
- a. turtle grass
 - b. manatee grass
 - c. sea oats
 - d. purple laver

48. Which of the following animals is LEAST likely to be found around mangrove roots?
- dolphin fish
 - snook
 - shrimp
 - mullet
49. What do salt marshes, cypress ponds, and mangrove swamps have in common?
- they are all wetlands
 - they have no value to humans
 - they are found only in south Florida
 - they are all high in salinity
50. The organic debris brought in by tides and trapped by the roots of mangrove trees
- serve as a source of food for marine organisms
 - reduces the force of the tides
 - serves as a depository for salt
 - provides a surface on which plankton can grow
51. Which of the following is an appropriate food chain for a mangrove ecosystem?
- Seaweed eaten by crab, crab eaten by moray eel, moray eel eaten by tuna
 - Detritus eaten by shrimp, shrimp eaten by fish, fish eaten by heron
 - Diatom eaten by copepod, copepod eaten by herring, herring eaten by salmon
 - Sea urchin eaten by shrimp, shrimp eaten by fish, fish eaten by manatee
52. Which mangrove tree is usually found growing closest to the water?
- white mangrove
 - black mangrove
 - red mangrove
 - buttonwood
53. One of the most common grasses found in a salt marsh is:
- manatee grass (*Syringodium*)
 - cord grass (*Spartina*)
 - bahia grass (*Bahia bahia*)
 - turtle grass (*Thalassia*)
54. Cordgrasses are adapted to live in salt water because they have
- special glands in their leaves to excrete excess salt
 - thick leaves to store water and pump salt out
 - roots that absorb excess salt
 - waxy stems that store freshwater
55. Which animal depends on an estuary for at least part of their life cycle?
- shrimp
 - clam
 - manatee
 - all of the above

56. Estuaries are found:
- on barrier islands
 - at the local swimming area
 - at the mouths of rivers
 - upstream from rivers
57. Brackish water is:
- a mixture of seawater and freshwater
 - a mixture of polluted water and clean water
 - formed by tannic acid in freshwater
 - a mixture of tannic acid and seawater
58. A food web
- is a simple chain of who eats who in a community
 - is what a fisherman uses to catch bait
 - describes the feeding relationships between species in a biotic community.
 - always starts with a scavenger
59. In a marine food chain, a shark would most likely be considered a
- omnivore
 - producer
 - top predator/carnivore
 - herbivore
60. The area of the ocean where most marine life live is
- over the continental shelf
 - in the open ocean (beyond the continental shelf)
 - in the deep and dark depths of the ocean
 - in the mouths of rivers
61. A species whose presence or absence reveals the health of an ecosystem is called
- a signature species
 - a generalist
 - a designated species
 - an indicator species
62. A nesting area for birds is called a
- rookery
 - clutch
 - pod
 - niche
63. Oyster communities are beneficial because they
- stabilize shorelines from wave action
 - help water quality
 - provide hard bottom habitats for fish and other animals
 - all of the above

64. Which of the following is a possible invasive fish species found off the Florida coast?
- toadfish
 - pompano
 - lionfish
 - goliath grouper
65. The salinity of seawater can be measured using a
- refractometer
 - thermometer
 - DO meter
 - secchi disk
66. Organisms that live on the sea floor are said to be/called
- nekton
 - plankton
 - pelagic
 - benthic
67. Organisms that grow attached to submerged portions of structures such as rocks, docks, buoys, boats and/or ships are often called _____ organisms.
- indicator
 - fouling
 - predatory
 - planktonic
68. Red tides are
- cause light to bend in the water
 - toxic accumulations of pollutants in the water
 - a special type of tide that occurs once during the year
 - marine phytoplankton blooms that may or may not be harmful to living things
69. The average salinity of seawater is
- 30 ml
 - 4.5 ppt
 - 35 ppt
 - 40 grams
70. Recent declines in many commercial fisheries are mostly due to
- global climate change
 - marine pollution
 - predation by marine mammals
 - overfishing by humans