

## MARINE BIOLOGY EXAM 3 – FINAL EXAM

Name:

**Read the Instructions for each series of questions carefully. Answer all questions. An unanswered question is counted as incorrect.**

**True/ False. Each question is worth 1 point. Read the entire sentence. Circle the correct answer. If the instructor cannot determine which answer is circled, then the question will be marked incorrect.**

1. True or False. Ectotherms like the marine reptiles are generally restricted to warm tropical waters.
2. True of False. Sea turtles can protect their head by retracting into their carapace, similar to tortoises.
3. True or False. A piscivorous sea bird is one that feeds on fish.
4. True or False. Penguins are a unique form of sea bird restricted mostly to Arctic waters.
5. True or False. Porpoising is a behavior of all sea birds.
6. True or False. Sea otters and polar bears are examples of the Order Carnivora.
7. True of False. One of the main differences between seals and sealions is that seals can rotate their hindflippers beneath their bodies.
8. True of False. Pinnipeds can use echolocation to find prey in murky waters.
9. True of False. Walruses are predators of invertebrates like clams and worms.
10. True or False. Both male and female walruses use their tusks for display purposes.
11. True or False. Sirenians evolved from elephant-like ancestors.
12. True or False. Dolphins are a form of whale.
13. True or False. The presence of 2 blowholes on a whale would indicate that the species is a member of the Mysticeti.
14. True or False. During echolocation, low frequency orientation clicks provide a whale a general (not precise) idea of its surroundings.

### MARINE BIOLOGY EXAM 3 – FINAL EXAM

15. True or False. The largest of the toothed whales is the Sperm Whale.
16. True or False. A population is a group of organisms of the same species that live in the same place.
17. True or False. An example of an Indirect Interaction is when sharks are removed from the ocean, resulting in increased skate abundance and decreased scallop abundance.
18. True or False. A commensal symbiosis is one wherein the symbiont benefits at the expense of the host.
19. True or False. The zooxanthellae/coral symbiosis is a good example of mutualism.
20. True or False. The rocky shores of the New England region are the result of glacial action.
21. True or False. Zonation on a rocky shore refers to the distinct bands of species that correspond to the different tidal heights (low, medium , high).
22. True or False. Life in the high intertidal zone is affected by important abiotic factors such as predation and competition.
23. True or False. Tidepools are an important refuge from desiccation.
24. True or False. Seastars are good examples of keystone predators in rocky shore communities.
25. True or False. Water in estuaries is generally higher in salinity than normal ocean water.
26. True or False. Animal diversity is generally lower in estuaries relative to the marine environment.
27. True or False. Fiddler crabs are often abundant in salt marshes that border estuaries.
28. True or False. Invertebrates that live buried in sediments are considered to be infaunal animals.
29. True or False. Kelp communities are dominated by species of red algae.
30. True or False. Pneumatophores are a form of aerial root in mangroves.

## MARINE BIOLOGY EXAM 3 – FINAL EXAM

**Multiple choice. Each question is worth 1 point.**

31. Which of the following characteristics are true of sea turtles?
- Cannot reproduce in the sea
  - Must return to land to lay eggs
  - Have a superb homing behavior
  - None of the above
  - All of the above
32. Which of the following characteristics are true of sea birds?
- Have salt glands
  - Have waterproof feathers
  - Nest on land
  - Do not form colonies
  - A & B only
  - A, B, & C only
  - All of the above
33. Animals and algae that live in the high intertidal zone of rocky shores are largely affected by which factors?
- Greater potential for desiccation (drying out)
  - Higher temperatures
  - Freshwater runoff
  - Greater competition
  - A & C only
  - A, B & C only
  - All of the above
34. Several different geological processes contribute to the formation of an estuary. Which of the following processes does not?
- Subduction
  - Drowned river valley
  - Volcanism
  - Retreating glaciers
  - Sand bar formation
35. Estuaries are homes to several different kinds of communities. Which community is generally not part of an estuary?
- Mudflat
  - Rocky shore
  - Saltmarsh
  - Mangrove forest
  - Open water

### MARINE BIOLOGY EXAM 3 – FINAL EXAM

36. Kelp forests are only present in regions with specific environmental conditions. Which of the following conditions are necessary for kelp forests to thrive?
- Cold temperate waters
  - Nutrient rich waters
  - Plenty of light
  - Soft sandy bottom
  - A, B, & C only
  - All of the above
37. Hermatypic corals are only present in regions with specific environmental conditions. Which of the following conditions are necessary for hermatypic corals?
- Warm waters
  - Coastal areas
  - Shallow waters
  - Clear waters
  - A, B & D only
  - All of the above
38. Which of the following organisms is not a form of phytoplankton?
- cyanobacteria
  - diatoms
  - dinoflagellates
  - jellyfish
  - seaweed
39. There are several adaptations to living in the epipelagic zone of the ocean. Which of the following adaptations is not characteristic of animals in this zone?
- Countershading
  - Counterillumination
  - Transparency
  - Strong swimming ability
40. The mesopelagic zone is slightly different from the epipelagic zone. Which of the following characteristics differentiate the mesopelagic zone from the epipelagic zone?
- Very little light in the mesopelagic
  - A thermocline in the mesopelagic
  - More nutrients in the mesopelagic
  - No photosynthesis in the mesopelagic
  - A, B & C only
  - All of the above

### MARINE BIOLOGY EXAM 3 – FINAL EXAM

41. Mesopelagic fish possess several adaptations for life in their environment. Which of the following is not characteristic of mesopelagic fish?
- Well developed teeth
  - Large mouth
  - Large size
  - Photophores
  - Highly sensitive eyes
42. If you wanted to see a fish that possessed a bioluminescent lure, how deep in the ocean would you have to venture?
- Only as deep as the epipelagic zone
  - About as deep as the mesopelagic zone
  - Beyond the mesopelagic zone
  - Into the ozone
43. Which of the following characteristics makes Georges Bank a unique location for fish?
- Mixed temperature regime
  - Shallow water
  - High phytoplankton production
  - Rocky substrate
  - Sargassum
  - A, B & C only
  - A, B, C & D only
  - All of the above
44. Which of the following animals play important roles (bad or good) in kelp forest communities?
- killer whales
  - sea urchins
  - abalone
  - sea otters
  - zooplankton
  - crabs
  - A, B, and C only
  - B & D only
  - All of the above

## MARINE BIOLOGY EXAM 3 – FINAL EXAM

Choose from the following terms to fill in the blanks below. A term may be used more than once, or not at all. Each blank is worth 2 points.

Oviparous	Chelonia	Squamata	Crocodylia
Reptilia	Aves	Salt gland	planktivore
Carnivoria	Pinniped	Walrus	Seal
Sealion	Sirenia	Manatee	Cetacea
Odontoceti	Mysticeti	Baleen	Spermaceti
Plankton	Junk	Intraspecific	Interspecific
Clupeoids	Cod	Mariculture	bioluminescence
Hermaphrodite	Flotsam	atoll	Fringing
Barrier	Crown-of-thorns	Keystone predator	Bioerosion
Thermal stress	DOM	Melon	Nitrate
Upwelling	El Nino	La Nina	Cleaning Station
Kelp	Corals	Nekton	meiofauna
Countershading	Counterillumination	Pneumatophore	Epifauna
Photic	Chthamalus	Balanus	
Pneumatocysts	Zooplankton	Southern Oscillation	

43. Species of the Order \_\_\_\_\_ have a thick carapace covered in scutes. However, species of the Class \_\_\_\_\_ are covered in feathers.

44. This predator known as the \_\_\_\_\_ devastates coral reefs in the IndoPacific. It's impact is so severe that it is considered a \_\_\_\_\_, an animal that has a disproportionate effect on its environment.

45. Species of the Order \_\_\_\_\_ can use echolocation to find their prey, while species of the Order \_\_\_\_\_ consume only plankton.

46. These fish, known as \_\_\_\_\_, are the most important commercial fish in the ocean.

47. During certain years, the phenomenon known as \_\_\_\_\_ leads to higher temperatures in the southern Pacific Ocean, causing dramatic changes in climate. The opposite event called \_\_\_\_\_ often follows.

48. Tiny animals known as \_\_\_\_\_ live in between sand grains, while large animals known as \_\_\_\_\_ live on top of the sea floor.

### MARINE BIOLOGY EXAM 3 – FINAL EXAM

49. The anatomical structure known as the \_\_\_\_\_ is found in all whales that echolocate. However, in the sperm whale this structure is generally referred to as the \_\_\_\_\_.

50. Reefs often form around tropical islands. The first stage in reef development is called the \_\_\_\_\_ reef; the second stage is the \_\_\_\_\_ reef; and the third stage is called an \_\_\_\_\_.

51. The \_\_\_\_\_ fishery collapsed after the site known as Georges Bank was overfished.

52. \_\_\_\_\_ often causes corals to bleach.

53. \_\_\_\_\_ events occur when wind blows parallel to the shoreline causing cold nutrient rich water to rise to the surface.

54. Tiny animals that cannot swim against the currents are called \_\_\_\_\_, while animals that are strong swimmers are called \_\_\_\_\_.

55. \_\_\_\_\_ is the practice of farming fish at sea.

56. Many animals contain organs full of bacteria that produce light. The biological production of light is called \_\_\_\_\_. In some cases, this biological production of light is used to match the background lighting, thereby making deep water animals difficult to see. This latter process is known as \_\_\_\_\_.

57. Gas filled bladders known as \_\_\_\_\_ help kelp to stay afloat in the photic zone.

58. Barnacles are some of the most abundant crustaceans in the rocky intertidal zone. Species of the large barnacle known as \_\_\_\_\_ outcompete the smaller species known as \_\_\_\_\_ in the low intertidal region. This form of competition between two different species is called \_\_\_\_\_ competition.