

Readings: Ch. 12-13

Here is a list of some of the terms that you should study for the final 50-point exam. This list is not guaranteed to be complete, and not all of the items here will be covered. Most of the questions will be about things that have been discussed in lecture or lab. No make-up is available for any reason.

invertebrates vs. vertebrates	echinoderms	pelagic birds
exooskeleton vs. endoskeleton	sea lilies	penguins
radial vs. bilateral symmetry	sea urchins (incl. sand dollars)	tubenoses (incl. albatrosses)
sessile vs. free-swimming	sea stars vs. brittle stars	pelicans & cormorants
calcareous, glass, & bath sponges	sea cucumbers	gulls, terns, puffins
mesoglea, spicules, spongin	pentamerous radial symmetry	marine mammals
canal, spongocoel, osculum	water-vascular system & tube feet	placenta & mammary glands
cnidarians	chordates (incl. vertebrates)	fur vs. blubber
hydrozoans (incl. man-of-war)	tunicates vs. lancelets	cetaceans
true jellyfish	pisces vs. tetrapods	toothed vs. baleen whales
sea anemones & corals	cartilage vs. true bone	dolphins & porpoises
digestive cavity vs. digestive tract	gill pouches, gill slits, opercula	baleen vs. conical teeth
polyp vs. medusa	lateral line & electricity	flippers & tail flukes
nematocysts	pectoral vs. pelvic fins	marine carnivora
flat, round, & segmented worms	jawless fishes	true seals
bristleworms & tubeworms	hagfish vs. lamprey	fur seals (incl. sea lions)
segmentation	photophores vs. true eyes	walruses
parapodia & setae	cartilaginous fishes (incl. sharks, rays vs. skates, ratfish)	sea otters
molluscs	heterocercal vs. homocercal tail	manatees
chitons	electric pits & claspers	rocky intertidal zones
tusk shells	bony fishes (incl. ray-finned fishes)	sandy beaches
gastropods (incl. nudibranchs)	swim bladder & buoyancy	equatorial zone
bivalves	fin ray supports	fringing vs. barrier reefs
cephalopods (incl. nautilus, octopuses, squids)	marine osmoregulation	coral atolls & coral cays
open vs. closed circulation	marine reptiles	mid-water & DSL
arthropods	scales & salt glands	abyssal sea-floor
horseshoe crabs	sea turtles	hydrothermal vents & chimneys
sea spiders	carapace & plastron	white vs. black smokers
crustaceans (incl. barnacles)	sea snakes	thermobacteria
biramous appendages	forked tongue & stereo-olfaction	Riftia tubeworms
jointed exoskeleton & molting	marine iguana	dandelion siphonophores
	crocodiles vs. alligators	