

OCN201 Fall 2008 - Exam 3 (Biological Section / Final) 75 Points

True/False (1 point each)

Indicate whether the statement is true or false.

- ___ 1. Tropical oceans typically have very low productivity year-round because they are nutrient limited
- ___ 2. The aphotic zone refers to the deepest part of the sea into which no sunlight penetrates
- ___ 3. Most fisheries are being fished at well below their maximum sustainable yield
- ___ 4. The average temperature of the Earth has increased about 1 degree Celcius in the last 100years
- ___ 5. The euphotic zone is the deepest part of the ocean
- ___ 6. Very few marine organisms are susceptible to viral infections
- ___ 7. Studies of whale falls have shown that they may serve as stepping stones for hydrothermal vent species
- ___ 8. Scavengers get their food by feeding on dead animals and detritus
- ___ 9. The age of the universe is about 4 billion years ago
- ___ 10. All primary production in the ocean is a result of photosynthesis
- ___ 11. Excluding China, the average world fishery catch is increasing
- ___ 12. The pH of the oceans is increasing.
- ___ 13. There are estimated to be 1 million species in the world
- ___ 14. Most species are thought to be microbes
- ___ 15. Linean taxonomy demonstrates how organisms evolved
- ___ 16. Feeding mechanisms are generally simpler for larger organisms
- ___ 17. Keystone species are small microbes at the base of the foodweb
- ___ 18. Coral reefs are ecologically complex
- ___ 19. An ecological niche only includes physical and chemical dimensions
- ___ 20. Most organisms in the deep sea depend on food falling down from the surface

Multiple Choice (1 point each)

Identify the choice that best completes the statement or answers the question.

- ___ 21. For decaying whales on the sea floor, the first of the three main stages of decomposition is characterized by:
 - a. chemoautotrophic bacteria
 - b. enrichment opportunists
 - c. mobile scavengers
 - d. ambush predators

- _____ 22. At hydrothermal vents, bacteria get the energy to drive chemosynthesis from
 - a. hydrogen sulfide
 - b. sugar
 - c. sunlight
 - d. heat
- _____ 23. Counterillumination refers to
 - a. having a reduced silhouette
 - b. using light flashes to attract prey
 - c. using light to find prey
 - d. producing light as camouflage
- _____ 24. If the euphotic zone is NOT deeper than the "critical depth", then:
 - a. Sperm whales do not need to dive as deep to find giant squid
 - b. counterillumination is counterproductive
 - c. a phytoplankton bloom can not occur
 - d. the conditions are right for a "red tide"
- _____ 25. Which of the following is an invertebrate
 - a. sea lion
 - b. squid
 - c. hagfish
 - d. penguin
- _____ 26. Animals that can NOT swim strongly enough to make headway against ocean currents are referred to as
 - a. plankton
 - b. sessile
 - c. oceanic
 - d. nekton
- _____ 27. Some corals harbor photosynthetic dinoflagellates known as
 - a. mastigonemes
 - b. zooxanthellae
 - c. polyps
 - d. cnidocytes
- _____ 28. Which of the following is the most abundant type of cellular life in the ocean
 - a. Prokaryotes
 - b. Fishes
 - c. Jellyfish
 - d. Protists
- _____ 29. El Nino (ENSO) events cause
 - a. a greater probability of tsunamis
 - b. increased primary production
 - c. reduced nutrients to the Eq. Pacific
 - d. no significant changes
- _____ 30. Which of the following is NOT one of the three domains of life
 - a. Prokaryotes
 - b. Eukaryotes
 - c. Archaea
 - d. Protistae

- _____ 31. Which of the following continuously increases with depth in the ocean:
- a. light
 - b. pressure
 - c. salinity
 - d. organic matter
- _____ 32. In oxygenic photosynthesis sugars are made from carbon dioxide and
- a. water
 - b. nitrogen
 - c. methane
 - d. hydrogen sulfide
- _____ 33. For the past several years, excluding aquaculture, the fish catch has been
- a. declining
 - b. rising sharply
 - c. remaining constant
 - d. fluctuating wildly
- _____ 34. The largest number of fish that can be taken without depleting future stocks is known as
- a. Maximum sustainable yield
 - b. Maximum harvest potential
 - c. Bycatch
 - d. Fishing down the foodweb
- _____ 35. If the evolutionary clock were to be replayed on planet earth again:
- a. the same species would probably evolve
 - b. different species would probably evolve
 - c. human beings would probably evolve again
 - d. Planet of the Apes would be reality
- _____ 36. The heirarchy of modern taxonomic system (in order) is:
- a. Kingdom, Domain, Class, Phylum, Family, Order, Genus, Species
 - b. Phylum, Kingdom, Domain, Class, Family, Order, Genus, Species
 - c. Domain, Kingdom, Phylum, Class, Order, Family, Genus, Species
 - d. Phylum, Kingdom, Class, Domain, Order, Family, Species, Genus
- _____ 37. Primary production is controlled by:
- a. light
 - b. concentrtrion of nutrients
 - c. depth of the mixed layer
 - d. all of the above
- _____ 38. The temperature of the earth's atmosphere is expected to increase by about _____ in the next 100 years
- a. -1.8 to +10C
 - b. +1.5 to 4.0C
 - c. 0C to +100C
 - d. +5 to 10C
- _____ 39. Based on scientific evidence, life most likely evolved on earth by
- a. Divine intervention
 - b. Spontaneous generation
 - c. Abiogenesis
 - d. Panspermy

- ___ 40. Typically, the main source of fisheries collapse is:
 - a. over fishing
 - b. pollution
 - c. natural variability
 - d. overfishing & natural variability
- ___ 41. The Miller-Urey experiment produced the following
 - a. amino acids
 - b. nucleic acids
 - c. complex sugars
 - d. all of the above
- ___ 42. What percentage of species have gone extinct
 - a. 1%
 - b. 10%
 - c. 50%
 - d. 99%
- ___ 43. What fraction of primary production is done by photosynthesizers in the ocean?
 - a. 1%
 - b. 25%
 - c. 50%
 - d. 99%
- ___ 44. Which of the following is NOT a type of phytoplankton
 - a. diatoms
 - b. cyanobacteria
 - c. dinoflagellates
 - d. polyp
- ___ 45. Pelagic consumers do NOT use the following mechanism to capture prey
 - a. diffusion
 - b. filter feeding
 - c. raptorial feeding
 - d. chemosynthesis
- ___ 46. Without consumers the ocean would fill with phytoplankton in
 - a. hours
 - b. days
 - c. years
 - d. decades
- ___ 47. Viruses are:
 - a. motile
 - b. parasites
 - c. metabolically active
 - d. not very abundant
- ___ 48. The order of ecological hierarchy is:
 - a. Individual, Population, Community, Ecosystem, Biosphere
 - b. Individual, Community, Population, Ecosystem, Biosphere
 - c. Individual, Community, Population, Biosphere, Ecosystem
 - d. Individual, Population, Ecosystem, Community, Biosphere

- ___ 49. Which of the following is NOT an abiotic interaction
 - a. salinity
 - b. temperature
 - c. pressure
 - d. territoriality

- ___ 50. On average, by-catch is what percentage of fisheries:
 - a. 1%
 - b. 30%
 - c. 100%
 - d. 800%

- ___ 51. Which of the following is true
 - a. Ocean biology affects the climate
 - b. The climate affects ocean biology
 - c. Both A and B
 - d. Neither A nor B

- ___ 52. Ocean acidification is the result of:
 - a. Waste water
 - b. Acid Rain
 - c. Elevated CO₂ concentrations
 - d. Hydrothermal vents

- ___ 53. Which of the following was not part of the mixture used in the original Miller-Urey experiment?
 - a. oxygen
 - b. ammonia
 - c. water
 - d. hydrogen

- ___ 54. Evolution requires which of the following three processes:
 - a. reproduction, variation, selection
 - b. reproduction, natural selection, genetic drift
 - c. natural selection, genetic drift, variation
 - d. heritability, over-production, selection

- ___ 55. Deep sea organisms have which of the following adaptations to the low light levels
 - a. clear bodies
 - b. red bodies
 - c. black bodies
 - d. all of the above

- ___ 56. What is the percentage of primary production that occurs in the ocean?
 - a. 1%
 - b. 25%
 - c. 50%
 - d. 99%

- ___ 57. One of the most abundant benthic consumers is
 - a. echinoderms
 - b. whales
 - c. seaweed
 - d. fish

