

FT 274 – Fisheries Biology – Final Exam (2 hours)



1)

How far down can light penetrate into seawater?

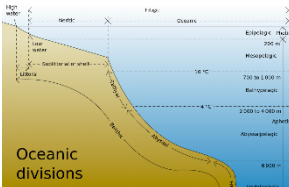
- a. 50 m
- *b. 100 m
- c. 200 m
- d. 1000 m

2) How many times faster can sound carry sounds in seawater?

- a. 2 times
- b. 10 times
- *c. 5 times
- d. 20 times

3) Which color in the visible light spectrum is absorbed 1st at sea level?

- a. blue
- b. green
- c. yellow
- *d. red



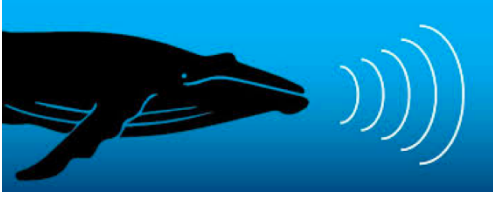
4)

In general, most of the light from the sun is absorbed or scattered within the top few meters of the ocean.

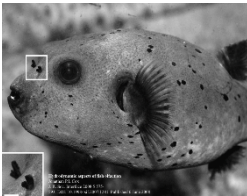
- *a. True
- b. False

5) In the ocean, smell is a short-range sense, while taste is long-range.

- *a. True
- b. False

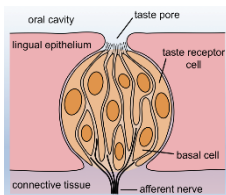


- 6) The speed of sound in water increased with decreasing temperature.
 a. True
 *b. False



- 7) Olfaction occurs in the nares via an olfactory rosette.
 *a. True
 b. False

- 8) Current can play an important role in remittance of chemical cues.
 *a. True
 b. False



- 9) Unlike olfaction, gustatory chemoreception can occur anywhere on the body.
 *a. True
 b. False



- 10) Klinotaxis is the side to side movement of the head so sharks find cues in the water.
 *a. True
 b. False

- 11) Fish feed using the follow sensory systems EXCEPT:
 a. Sight

- b. Taste
- c. Barbles
- *d. Adipose fins



12)

As sound waves reach a fish, the otolith, which is more dense than the rest of the fish, vibrates at different frequencies than the rest of the fish. This difference bends ciliary hairs that are connected to nerves.

- *a. True
- b. False

13) Which of the following is NOT an adaptation to increase the sensitivity of hearing?

- *a. thin caudal peduncles
- b. amplification via the swim bladder
- c. forked extensions of the swim bladder
- d. Weberian ossicles



14)

Sharks are attracted to irregularly pulsed sounds such as those made by struggling prey.

- *a. True
- b. False

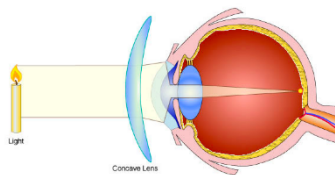
15) What is the sensory system is associated with mechanoreceptors for a distance touch often sensing vibrations in the water.

- a. Weberian ossicles
- b. Otoliths
- *c. Lateral lines
- d. ampullae of Lorenzini

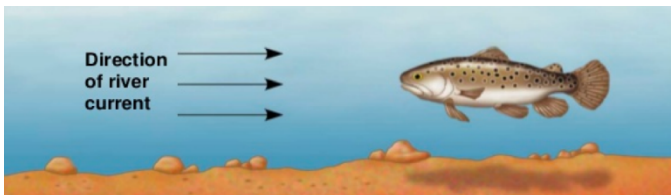


- 16) In fast swimming fish, the lateral line is often offset from the middle of the fish due to disturbances associated with the pectoral fins.
*a. True
b. False

- 17) In Elasmobranchs, the nictitating membrane can descend over the pupil to protect the eye while feeding.
*a. True
b. False



- 18) In fish the closer the rods are packed in the retina, the more acute the distinction of light/dark.
*a. True
b. False



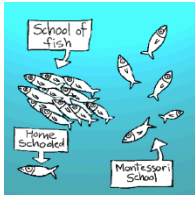
- 19) What is the term associated with fish keeping their head oriented into the current?
a. Phototaxis
b. Chemotaxis
*c. Rheotaxis
d. Klinotaxis



- 20) Electro-reception in sharks are unique organs that both send and receive signals.
*a. True
b. False

- 21) What is the name for fish that migrate entirely within saltwater?

- a. potadromy
- *b. oceanodromy
- c. saltwateradromy
- d. catadromy



22) What is the primary reason that fish migrate?

- a. food resources
- b. temperature gradients
- *c. reproduction
- d. physiology

23) The two basic color types in fish are pigments and structural colors.

- *a. True
- b. False

24) Disruptive coloration is an adaptation to help schooling fish orient to each other.

- a. True
- *b. False



25) Which of the following is the correct order of ecological filters:

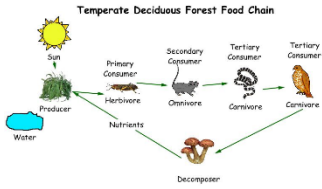
- a. Ecosystem, community, biosphere
- b. Biosphere, population, ecosystem
- c. Population, community, organism
- *d. Ecosystem, community, population

26) A niche is a term describing the relational position of a species or population in an ecosystem.

- *a. True
- b. False

27) Species richness takes into account both the number of species, but also the abundance of each of the species.

- a. True
- *b. False



28)

In most marine systems, predators and prey are often described by simple food webs.

- a. True
- *b. False

29) Human beings need to be considered an important member of marine food webs.

- *a. True
- b. False

30) As you go up the food web, the size and number of species gets larger.

- a. True
- *b. False



31)

In thinking about sea otters as a Keystone species, as the number of sea otters increase, the number of sea urchins should decrease.

- *a. True
- b. False



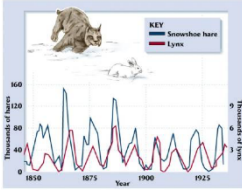
32)

When two organisms from the same species interact, we call it Interspecific interactions.

- a. False
- *b. False

33) Which organisms often make up the base of the trophic pyramid?

- a. 2nd level carnivores
- *b. primary producers
- c. top carnivores
- d. 1st level consumers



34)

“Top-down” means that species occupying the highest trophic level exert a controlling influence on the species below it.

- *a. True
- b. False

35) In top-down regulation, prey populations will often boom-and-bust based upon increases and decreases in predators.

- *a. True
- b. False



36)

Exploitation competition, is when one species exploits a resource before another one can.

- *a. True
- b. False

37) Symbiosis is when two species in close proximity interact with each other.

- *a. True
- b. False



38)

What is the symbiotic relationship where one organism benefits and the other is not affected?

- a. Parasitism
- *b. Commensalism
- c. Mutualism
- d. Competition



39)

What is the symbiotic relationship where one organism benefits and the other is harmed?

- *a. Parasitism
- b. Commensalism
- c. Mutualism
- d. Competition

40) By definition, FISH usually have all of the following characteristics, EXCEPT:

- a. Respiration with internal gills
- *b. Warm-Blooded
- c. Vertebrate
- d. Scales or modifications of them

41) Which family of fish have NO jaws, NO scales, NO paired fins and are known to be parasites on other fish?

- a. Chimeriformes
- b. Myxiniiformes
- c. Clupeamorphes
- *d. Petromyzontiformes

42) What is the common name for the primary fish species in the Chimaeriformes order?

- a. Bonefish
- b. Eagle Rays
- *c. Ratfish
- d. Remoras

43) Surprisingly, in the Order Orectolobiformes, the Wobbegons and Nurse sharks are also related to Whale sharks

- *a. True
- b. False

44) Which of the following is NOT a member of the Lamniformes order?

- *a. Great White shark
- b. Sand Tigers
- c. Thresher sharks
- d. Goblin sharks

45) Which fish order includes the skates and rays?

- a. Elopomorphes
- *b. Rajiformes
- c. Clupeamorphes
- d. Siluriformes

46) Which of the following is not in the Order Elopomorpha?

- a. Moray Eels
- b. Tarpon
- c. Bonefish
- d. Herring

47) Most bait-fish fall under the fish Order:

- *a. Clupeiformes
- b. Siluriformes
- c. Myxiniiformes
- d. Rajiformes

48) Pirahna's fall under which fish Order?

- a. Siluriformes
- *b. Characiformes
- c. Petromyzontiformes
- d. Elopomorphes

49) What is the fish Order for the seahorses and pipefishes?

- a. Siluriformes
- *b. Gasterosteiformes
- c. Myxiniiformes
- d. Rajiformes

50) Which of the following is NOT a member of the Pleuronectiformes?

- *a. Pacific halibut
- b. Flounders
- c. Soles
- d. Sticklebacks

51) What is the fish Order that includes Rockfish, Greenling, and Sablefish?

- a. Tetradontiformes
- b. Perciformes
- *c. Scorpaeniiformes
- d. Siluriformes

52) Which of the following is NOT in the Order Salmoniformes?

- a. Dolly Varden
- b. Lake Trout
- c. Pacific Salmon
- *d. Walleye Pollock

53) Fish in the Order Beryciformes are deep dwelling fish with adaptations for low or no light conditions.

- *a. True
- b. False

54) Which of the following is NOT in the Order Scorpaeniformes?

- *a. Perch
- b. Rockfishes
- c. Sablefish
- d. Sculpins



56)

5) Genotypic genetic variations are characteristics that are expressed like color.

- a. True
- *b. False

57) Which of the following is NOT a fish in the Chondrichthyes?

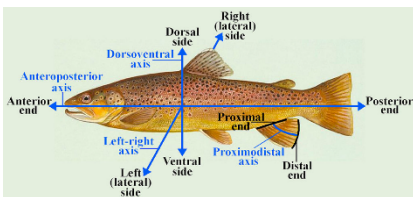
- *a. Lungfish
- b. Skates
- c. Sharks
- d. Rays

58) What is the name of the group often called, the “Bony fish.”

- a. Chondrichthyes
- *b. Osteichthyes
- c. Aganathans
- d. Siphonophores

59) 96% of all living fish species are in the Teleost group.

- *a. True
- b. False



60)

Which of the following has Depressiform body shape?

- a. Ratfish
- *b. Halibut
- c. Salmon
- d. Tuna



61)

Which of the following has Fusiform body shape?

- a. Ratfish
- b. Halibut
- c. Salmon
- *d. Tuna

62) Which of the following would be considered a Rover Predator?

- *a. Sailfish
- b. Halibut
- c. Barracuda
- d. American eel

63) A surface feeding fish will have which kind of mouth?

- a. Terminal
- b. Inferior
- *c. Superior
- d. Subterminal



64)

Which type of gill ventilation is associated with forage fish swimming with their mouths open?

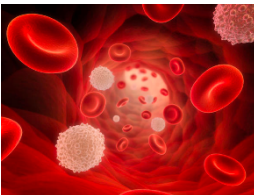
- a. Buccal pumping
- b. Ram pumping
- *c. Ram ventilation
- d. Buccal extraction



65)

Anoxic conditions are areas like tidepools that have slightly lower levels of oxygen due to fish and invertebrate ventilation.

- a. True
- *b. False



66)

For fish, most of the oxygen carried in the Hemoglobin of the Erythrocytes.

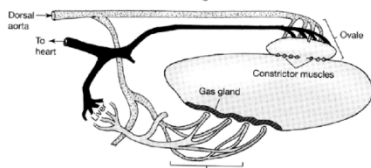
- *a. True
- b. False

67) Most fish species are found in the open ocean.

- a. True
- *b. False

68) The physoclistous swim bladder are connected to the guy via a pneumatic duct.

- a. True
- *b. False



69) unacademy.com/335/346/346/544/ Rete mirabile with parallel vessels dissected apart

What does the term "rete mirabile" mean?

- *a. Wonderful net
- b. Gas exchanger
- c. Swim bladder
- d. Buoyancy compensator

70) What term means maintaining a steady state equilibrium in the internal environment of an organism?

- a. Counter-current exchange
- b. Anoxic
- *c. Homeostasis
- d. Pycnostasis



71)

Piscivores are fish that feed to dead organic material off of the bottom

- a. True
- *b. False



72)

Schooling fish like Herring are known to be suction feeders.

- a. True
- *b. False

73) What is the term associated with the break-down of molecules into smaller units to release energy.

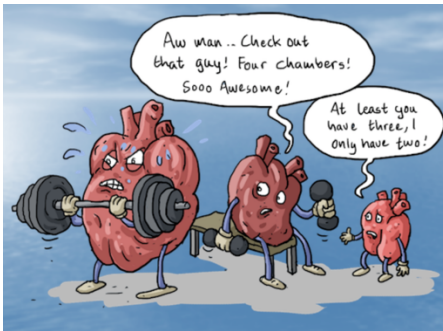
- a. Anabolism
- *b. Catabolism
- c. Canabolism
- d. Enzymobolism



74)

Fish have two basic blood cell types, they are Erythrocytes and Leukocytes.

- *a. True
- b. False



75)

How many chambers are most fish hearts?

- a. 1
- *b. 2
- c. 3
- d. 4

76) Each hemoglobin molecule has the ability to bind how many oxygen molecules?

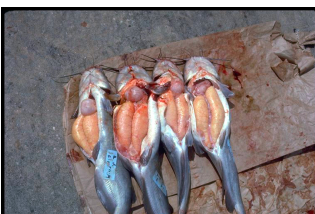
- a. 3
- *b. 4
- c. 10

77) Crocodile Icefish have more hemoglobin than most Teleosts because they live in extremely cold water.

- a. True
- *b. False

78) If Anabolism is greater than Catabolism then a fish will grow.

- *a. True
- b. False



79)

What is the term for the common measure of reproductive potential, often categorized as the number of eggs in female ovaries?

- a. Carrying-capacity
- b. Dimorphism
- *c. Fecundity
- d. Bioenergetics

80) For most fish, sexes are NOT separate and can be determined externally.

- a. True
- *b. False

81) Sexual dichromatism is a reference to the different body shapes and/or sizes between male and female fish of the same species.

- a. True
- *b. False

82) Tuna and sardines are good examples of Pelagic non-guarders.

- *a. True
- b. False

83) Salmon are considered to be non-guarders classified further as Brood-hiders.

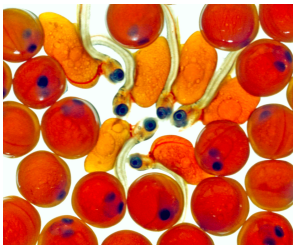
- *a. True
- b. False

84) The two groups of Guardians are the Substrate Spawners and the Nest Spawners.

- *a. True
- b. False

85) Which of the following is NOT considered a Bearer?

- *a. Herring
- b. Jawfish
- c. Pipefish
- d. Seahorses



86) What is the mode of reproduction associated with egg laying?

- a. Ovoviviparity
- b. Viviparity
- *c. Oviparity
- d. Viparity



87) What is the mode of reproduction associated with embryos that are retained, but have individual yolks?

- *a. Ovoviviparity
- b. Viviparity
- c. Oviparity
- d. Viparity

88) Which of the following has the greatest chance of survival and the greatest investment by parents?

- a. Ovoviviparity
- *b. Viviparity
- c. Oviparity
- d. Ovoviviparity

89) K-selection fish usually mature young, have many offspring and have high mortality rates.

- a. True
- *b. False



90) A good example of r-selection in fish are sharks.

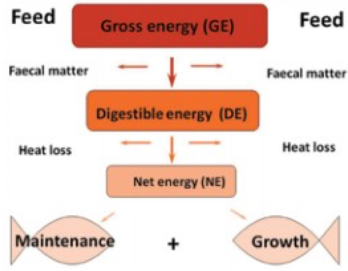
- a. True
- *b. False

91) Which of the following is NOT one the major developmental stages for fish?

- a. Embryonic
- b. Juvenile
- c. Senescent
- *d. Catabolic

92) Indirect development makes reference to fish that first have to go through larval stages before they change into adult forms.

- *a. True
- b. False



- 93) What is the term that references the balance of energy between metabolism, growth, reproduction and excretion?
- Carrying-capacity
 - Dimorphism
 - Fecundity
 - *d. Bioenergetics
- 94) Which of the following is NOT a factor that can impact fish reproductive success?
- Age at the onset of reproduction
 - *b. Photoperiod
 - Reproductive investment/effort
 - Fecundity
- 95) The term Iteroparous makes reference to fish that can have many different reproductive events.
- *a. True
 - False
- 96) What is the organ found in most Teleosts that secretes enzymes near the stomach that helps in breaking down food?
- *a. Pyloric caeca
 - Esophagus
 - Spiracle
 - Rectum
- 97) Most fish are ectothermic (ie. They have a temperature similar to that of their environment).
- *a. True
 - False
- 98) Which of the following is NOT a way that fish achieve neutral buoyancy?
- Low density compounds
 - Swim bladders
 - *c. Increasing surface area via spines and structures
 - Reduction of heavy tissues
- 99) Most fish need to maintain a certain amount of both fresh water and solutes.
- *a. True
 - False
- 100) Fish with densely packed, thin, and long gill rakers are probably eating other fish.
- a. True

*b. False