

Student Number: _____ Seat Number _____

BIO 1130FF

An Introduction to Organismal biology
Final examination
Worth 35% of your final grade

December 16, 2014

Part A: Multiple choice questions
40 points (1 point/question)

- a) Fill in the bubbles for your name and student number and BIO1130FF for the course code. Fill in the same information in text in the boxes above the bubbles.
- b) Use only a pencil to fill in the answer sheet. If you erase a question be sure to erase all of the pencil mark. Don't place any marks anywhere on the sheet other than where the bubbles are for personal information or your answers.
- c) Do not place any answers on the question sheet.
- d) This is not an open book exam.
- e) A calculator is not required for this exam
- f) **CAUTION to minimize paper waste this part of the exam has been printed back to back**

NOTE: If you do not fill in the student number and course code as **BIO1130FF** it will be impossible to identify your answer sheet and you will receive a **ZERO** for this part of the exam

FF.1 Living members of the lineage ____ include the sharks, skates, and rays. They all have skeletons made entirely of cartilage.

- a. Actinopterygii
- b. Petromyzontoidea
- c. Sarcopterygii
- X** d. Chondrichthyes

FF.2 Which reproductive strategy is facilitated by (easier to use in) an aquatic habitat, as compared with a terrestrial habitat?

- a. sexual reproduction
- b. asexual reproduction
- c. internal fertilization
- X** d. external fertilization

FF.3 Protostomes and deuterostomes differ markedly in

- a. the pattern of embryological development
- X** b. the origin of the anus and the mouth
- c. the pattern of fertilization
- d. the presence of a mantle cavity

FF.4 Which of the following is a diploblastic phylum of aquatic predators?

- a. Mollusca
- b. Echinodermata
- c. Annelida
- d. Arthropoda
- X** e. Cnidaria

FF.5 A single vegetative body that contains both a fungus and a green alga would be called a(n)

- a. haustorium.
- b. ectomycorrhiza.
- X** c. lichen.
- d. arbuscule.

FF.6 Deuterostomes that have an endoskeleton are part of which phylum?

- a. Mollusca
- b. Cnidaria
- c. Arthropoda
- X** d. Echinodermata
- e. Annelida

FF.7 Which of the following characteristics is found only in the angiosperm life cycle?

- X** a. double fertilization
- b. megaspores
- c. ovule
- d. pollen tube

FF.8 The specialized male gametophyte of seed plants, such as gymnosperms, is called a(n)

- a. ovule.
- X b. pollen grain.**
- c. strobilus.
- d. sporopollenin.

FF.9 A typical ectoparasite has all of the following characteristics except:

- a. feeds from an organism larger than itself.
- b. lives outside its host.
- c. grasps its host with its legs or mouth.
- d. has piercing mouthparts.
- X e. lacks a digestive system.**

FF.10 The last common ancestor of all animals was probably a

- a. unicellular algae.
- b. plant.
- c. multicellular fungus.
- d. unicellular yeast.
- X e. flagellated protist.**

FF.11 Which of the following is NOT a trait shared between green algae and land plants?

- X a. stomata**
- b. store energy captured during photosynthesis as starch
- c. chloroplasts with chlorophyll b
- d. cellulose in their cell walls
- e. chloroplasts with chlorophyll a

FF.12 Which of the following are characteristics of the phylum Cnidaria?

1. a gastrovascular cavity, 2. a polyp stage, 3. a medusa stage, 4. Cnidocytes, and 5. a pseudocoelom
- a. 2, 3, and 4
 - b. all five of these
 - X c. 1, 2, 3, and 4**
 - d. 1 and 4
 - e. 2 and 3

FF.13 Which of these time intervals, based on plant fossils, came last (most recently)?

- X a. rise and diversification of angiosperms**
- b. carboniferous swamps with giant horsetails and lycophytes
- c. extensive growth of gymnosperm forests
- d. colonization of land by early liverworts and mosses

FF.14 Most of the world's coal deposits were formed when from ancient _____ died.

- X a. seedless vascular plants**
- b. dinosaurs and their monocot diet
- c. cycads
- d. mosses

FF.15 Specialization of regions of the body for specific functions, as seen in the arthropods, is called

- a. tagmatization.
- b. metamerism.
- c. truncation.
- d. differentiation.
- e. cephalization.

FF.16 Which of the following sequences properly depicts the plant life cycle?

- a. zygote, sporophyte, spore, gametophyte, gametes, zygote
- b. zygote, gametophyte, gametes, sporophyte, spore, zygote
- c. zygote, spore, sporophyte, gametes, gametophyte, zygote
- d. zygote, gametes, gametophyte, spore, sporophyte, zygote

FF.17 The acoelomate body is characteristic of which animal taxon:

- a. Ecdysozoa
- b. Platyzoa
- c. Lophotrochozoa
- d. Deuterostomia

FF.18 Which of the following characteristics is not found in liverworts?

- a. asexual reproduction by gemmae
- b. sexual reproduction when motile sperm swim outside the plant to the egg
- c. sporophyte grows within the parent gametophyte
- d. central strand of primitive conducting tissue

FF.19 Bilateral symmetry is advantageous primarily because it allows for the development of _____.

- a. a specialized body cavity.
- b. a hydrostatic skeleton.
- c. limbs for the infant to attach to a parent.
- d. duplicate body parts in case of injury.
- e. a specialized head and posterior.

FF.20 Protostome characteristics include which of the following?

- a. a mouth that develops secondarily, and far away from the blastopore
- b. coelom formed by shizocoely
- c. radial body symmetry
- d. spiral cleavage
- e. None of the above

FF.21 Which of the following is the most accurate definition of a mushroom?

- a. a collection of saclike cells called asci
- b. the nutrient-absorbing region of an ascomycete
- c. the nutrient-absorbing region of a basidiomycete
- d. a reproductive structure formed only by basidiomycetes

BIO 1130FF –Final exam – December 16, 2014
Multiple choice questions - Place your answers on the answer sheet

FF.22 Which evolutionary innovation was most significant in helping tetrapods move to dry terrestrial environments?

- a. the amniotic egg
- b. the lung
- c. endothermy
- d. bone
- e. limb specialization

FF.23 Which are the major endomembrane components in a eukaryotic cell?

- a. nuclear envelope, the endoplasmic reticulum, and mitochondria
- b. nuclear envelope, mitochondria, and chloroplasts
- c. nuclear envelope, the endoplasmic reticulum, and chloroplasts
- d. nuclear envelope, the endoplasmic reticulum, and the Golgi complex

FF.24 Terrestrial vertebrates made their appearance approximately _____ years ago.

- a. 4 billion
- b. 1 billion
- c. 900 million
- d. 400 million
- e. 98 million

FF.25 The process in fungi that allows nutrients to flow from food-absorbing parts of the fungal body to other, nonabsorptive parts is

- a. osmosis.
- b. symbiosis.
- c. cytoplasmic streaming.
- d. plasmogamy.

FF.26 The rasping/grinding structure occurring in the mouth of most molluscs is the

- a. Tongue.
- b. radula.
- c. jaw.
- d. operculum.

FF.27 In which of the following groups is the evolution of true roots first seen?

- a. mosses
- b. conifers
- c. liverworts
- d. seedless vascular plants

FF.28 The evolutionary contribution of amphibians to life on land was the development of

- a. the amniotic egg and shell.
- b. lungs and limbs.
- c. a watertight skin.
- d. a life cycle independent of a need for water to breed.
- e. All of the above are amphibian "innovations."

FF.29 The slender, rootlike structures found in nonvascular plants are called _____.

- a. rhizomes
- b. gametangia
- c. thalli
- X** d. rhizoids
- e. protonemata

FF.30 The shell of a mollusc is secreted by the

- a. radula.
- X** b. mantle.
- c. visceral mass.
- d. foot.

FF.31 Periodic shedding of the arthropod exoskeleton is called

- a. sclerotization.
- X** b. ecdysis.
- c. calcification.
- d. articulation.
- e. metamorphosis.

FF.32 Monotremes differ from other mammals in that they _____.

- a. do not maintain elevated body temperatures
- b. do not nurse their young with milk
- X** c. lay eggs
- d. do not have a four-chambered heart

FF.33 Insect dominance of the terrestrial environment is probably due to the evolution of

- X** a. flight.
- b. cephalization.
- c. the exoskeleton.
- d. metamerism.
- e. jointed appendages.

FF.34 Best describes muscle organization in a nematode

- a. layers of longitudinal and circular muscle
- b. bands of longitudinal muscle
- c. a single layer of circular muscle
- X** d. a single layer of longitudinal muscle
- e. none of the above

FF.35 Flatworms have

- a. radial symmetric.
- b. tube-within-a-tube body plan
- c. eucelomate body plan
- X** d. none of the above

FF.36 The water pumping cell of a sponge is the

- a. sclerocyte
- b. amoebocyte
- X** c. choanocyte
- d. pinacocyte

FF.37 Which of the following is a characteristic of adult echinoderms?

- a. lophophore
- b. exoskeleton
- X** c. radial symmetry
- d. gastrovascular cavity
- e. spiral cleavage

FF.38 In addition to decomposition and decay, the other major ecological role of the fungi involves

- a. producing medicines for humans.
- b. digesting ant species.
- X** c. assisting plants in mineral acquisition.
- d. performing photosynthesis

FF.39 The substance that typically provides rigidity to fungal cell walls is

- a. cellulose.
- b. lignin.
- c. starch.
- X** d. chitin.

FF.40 Which of the following is the developing gut for most animal embryos?

- a. mesoglea
- X** b. archenteron
- c. blastopore
- d. schizocoelom