JUNE EXAMINATION (UNIT1-6)
June 2018
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TOTAL 150

QUESTION 1 [18]

1.1 The mycelium of a multicelled fungus is a mesh of filaments, each called a _____.

a. septa
b. hypha
c. spore
d. sac

1.2 A plasmid is a circle of _____.

a. RNA
b. DNA
c. either RNA or DNA
d. ATP

1.3 Which of the following infectious diseases is caused by bacteria?

a. Flu.
b. AIDS.
c. Measles.
d. Syphilis.

1.4 Antibodies are _____.

a. antigen receptors
b. made only by B cells
c. proteins
d. all of the above

1.5 Allergies occur when the body responds to _____.

a. pathogens
b. toxins
c. normally harmless substances
d. all of the above

1.6 Vaccines are designed to produce _____.

a. antibodies
b. immunity
c. viruses
d. a and b

1.7 In the life cycle of the pine tree, the ovules are found on ___.

a. needle-like leaves.
b. seed cones.
c. root hairs.
d. pollen cones.

1.8 Monocotyledonous plants often have ____.

a. parallel leaf venation.
b. flower parts in units of four or five.
c. leaves with petioles only.
d. both b and c are correct.

1.9 Which of these pairs is mismatched?

a. anther → produces microspores.
b. carpel → produces pollen.
c. ovule → becomes seed.
d. ovary → becomes fruit.

1.10 Which of the following groupings includes the largest number of species?

a. Invertebrates
b. Chordates
c. Insects
d. Vertebrates

1.11 Which of the following animal groups does not have tissues derived from mesoderm?

a. Annelids
b. Amphibians
c. Cnidarians
d. Flatworms

1.12 An adult animal that possesses bilateral symmetry is most certainly also _____.

a. Triploblastic
b. a deuterostome
c. eucoelomate
d. the product of metamorphosis

1.13 All of the following involves active transport across membranes ***except*** _____.

a. the movement of mineral nutrients from the apoplast to the symplast.
b. the movement of sugar from the mesophyll cells into the sieve-tube members in maize.
c. the movement of sugar from one sieve-tube member to the next.
d. the movement of mineral nutrients into cells of the root cortex.

1.14 Which one (1) of these pairs is mismatched?

a. slightly movable joint - vertebrae
b. hinge joint - hip
c. synovial joint - elbow
d. immovable joint – sutures in cranium

1.15 Which of the following statements is correct?

a. Phloem sap is an aqueous solution that is high in glycogen.
b. Phloem sap travels from a sugar sink to a sugar source, a net producer of sugar.
c. Phloem sap travels from a sugar source to a sugar sink, a net producer of sugar.
d. Phloem sap travels from a sugar source to a sugar sink, a net consumer or storer of sugar.

1.16 Which one (1) of the following occurs in the arm when food is brought to the mouth from a plate?

a. Biceps relax and the triceps contract.
b. The bended arms is stretched.
c. Biceps and triceps contract.
d. The angle of the elbow joint becomes smaller.

1.17 The membrane that surrounds bundles of fascicles.

a. Epimysium.
b. Perimysium.
c. Endomysium.
d. Sarcolemma.

1.18 The skeletal system does not _____.

a. produce blood cells
b. store minerals
c. help produce movement
d. produce body heat

QUESTION 2 [18]

Provide the correct biological term for the following biological statements.

2.1 Protein sub-units that forms a capsid.

2.2 Additional covering external to the capsid, present in virus attacking animal cells.

2.3 One (1) of a pair of gametes that are morphologically the same.

2.4 Antibiotic that stops bacteria from multiplying.

2.5 Yellow/cream colour fluid produced by the milk glands for the first week after child birth.

2.6 A disease causing agent.

2.7 Substance in spore walls that makes them resistant to harsh environments.

2.8 The part of the plant where cells continue to divide and grow.

2.9 The scientific term for all non-vascular plants.

2.10 Specialized organelles within cnidocytes that eject a stinging thread (toxins to paralyze prey).

2.11 Organism that do not move around.

2.12 Organisms with true tissues, multicellular.

2.13 Organ producing sugar (mature leaves).

2.14 Organ that stores sugar (net consumer).

2.15 Drops of water are forced out of the vein endings along the edges of leaves called hydathodes.

2.16 Threadlike strands within muscle fibres.

2.17 Layer that surrounds bundles of muscle fibres.

2.18 Structures that holds bones together.

QUESTION 3 [12]

Provide the correct biological statement for the following biological terms.

3.1 Anisogametes.

3.2 Antigen.

3.3 Pus.

3.4 Eosinophils

3.5 Embryophytes.

3.6 Angiosperms.

3.7 Cleavage.

3.8 Blastopore.

3.9 cytosol.

3.10 Dendrochronology.

3.11 Endomysium

3.12 Pivot joint.

QUESTION 4 [18]

4.1 Why does fungi relate closer to animals as appose to plants? (4 x ½ = 2)

4.2 What is the function of the following structures in the bacterium cell? (8 x ½ =4)

4.2.1 Flagellum.
4.2.2 Pili.
4.2.3 Cell envelope.
4.2.4 Slime layer.
4.2.5 Cell wall.
4.2.6 Plasma membrane.
4.2.7 Nucleoid.
4.2.8 Ribosomes.

4.3 How will a bacteria cell use budding to reproduce? (3)

4.4 Explain in detailed steps how HIV will reproduce. (8 x ½ = 4)

4.5 What type of micro-organism will cause the following diseases? (4)

4.5.1 HIV
4.5.2 Tuberculosis
4.5.3 Malaria
4.5.4 Thrush

4.6 Where in the human body will you be able to find *Escherichia coli*. (1)

QUESTION 5 [18]

5.1 Virus-like particle vaccines and subunit vaccine are two (2) examples of vaccines used. List two (2) other types of vaccines **and discuss these other two (2) vaccines in detail.** (6)

5.2.1 What part of the immune system includes colostrum? (1)

5.2.2 List six (6) ingredients of colostrum. (6 x ½ = 3)

5.3.1 What does B-lymphocytes form part of? (1)

5.3.2 How does B-lymphocytes work? (4)

5.4 Provide three (3) different body secretions that forms part of the innate immune system? (3)

QUESTION 6 [16]

6.1 Name and discuss the five (5) common (derived) traits of land plants which separate them from ancestral plants (algal relatives). (10)

6.2 Draw and label the life cycle of the fern. (12 x ½ =6)

QUESTION 7 [17]

7.1 Complete the following table for the nine (9) phyla of the Kingdom Animalia. (27 x ½ = 13½)

PHYLUM	EXAMPLE	1 X CHARACTERISTIC: ANY ONE (1)
1)		
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		

7.2 Draw a labelled gastrula. (3½)

QUESTION 8 [17]

8.1 There are three (3) types of tissues present in plant organs. Name these three (3) types of tissues and provide one (1) function of each. (6 x ½= 3)

8.2 Provide a labelled diagram of the cross section through a dicot root. (8 x ½ = 4)

8.3 Discuss secondary growth in a dicot stem. (8 X ½ = 4)

8.4 Discuss the transmembrane route where water and minerals are transported through the plant. (6)

QUESTION 9 [16]

9.1 List and discuss the six (6) functions of the human skeleton. 12)

9.2 Discuss the structure of a long bone and provide two (2) specific bones as examples. (4)

TOTAL 150