

SECTION A

QUESTION 1

1.1 Various options are provided as possible answers to the following questions.

1.1.1 Which ONE of the following blood vessels supply the heart with blood?

- A Aorta
- B Coronary artery
- C Superior vena cava
- D Pulmonary veins

1.1.2 Which ONE of the following statements are correct about the heart?

- A The pulmonary circuit pumps blood from the right side of the heart to the lungs
- B The pulmonary circuit pumps blood from the left side of the heart to the lungs
- C The systemic circuit pumps blood from the right side of the heart to the lungs
- D The systemic circuit pumps blood from the right side of the heart to the body

1.1.3 The typical weather conditions that exist in a particular area:

- A Ecosystem
- B Biome
- C Environment
- D Climate

1.1.4 Which of the following groups of plants and animals are found in the fynbos biome?

- A Grass, trees, lion, elephant, cheetah
- B Yellowwood, ferns, Knysna turaco, bushbuck, duiker
- C Shrubs, trees, elephant, kudu, Vervet monkey
- D Ericas, Proteas, Geometric tortoise, sugarbird

1.1.5 Sino wants to give his mom a pot with magnolias for her birthday. He knows that magnolias need soil with good water-holding capacity and nutrients. Which of the following should he use to fill his pot with?

- A Only small soil particles alone
- B Small soil particles with some added humus
- C Sandy soil with some added humus
- D Loamy soil with lots of gravel for drainage

1.1.6 Melting ice caps and rising sea levels have occurred as a result of humans disrupting the ... cycle.

- A water
- B nitrogen
- C oxygen
- D carbon

1.1.7 Thorn decides to test the effect of salt concentration on the activity of his tropical sea fish. He has two tanks. One he fills with normal sea water he collected from the beach. The other tank he fills with 80% sea water and 20% fresh water.

Which of the following represent ways that Thorn can ensure the validity of his experiment?

- (i) Use the same species of fish in both tanks
- (ii) Use the same size tanks
- (iii) Use the same type of water in both tanks
- (iv) Put both tanks in the same location at his house

- A (i), (ii) and (iii)
- B (i), (ii) and (iv)
- C (i) and (ii) only
- D All of the above

1.1.8 Organisms in an ecosystem that break down the bodies of dead organisms:

- A Producers
- B Primary consumers
- C Secondary consumers
- D Decomposers

1.1.9 A type of fossil showing the movement (e.g. footprints) of animals:

- A True form fossils
- B Moulds and impressions
- C Casts
- D Trace fossils

1.1.10 The super continent made up of all of the continents joined together, is called ...

- A Laurasia.
- B Gondwanaland.
- C Pangea.
- D Pandora.

(10 x 2) (20)

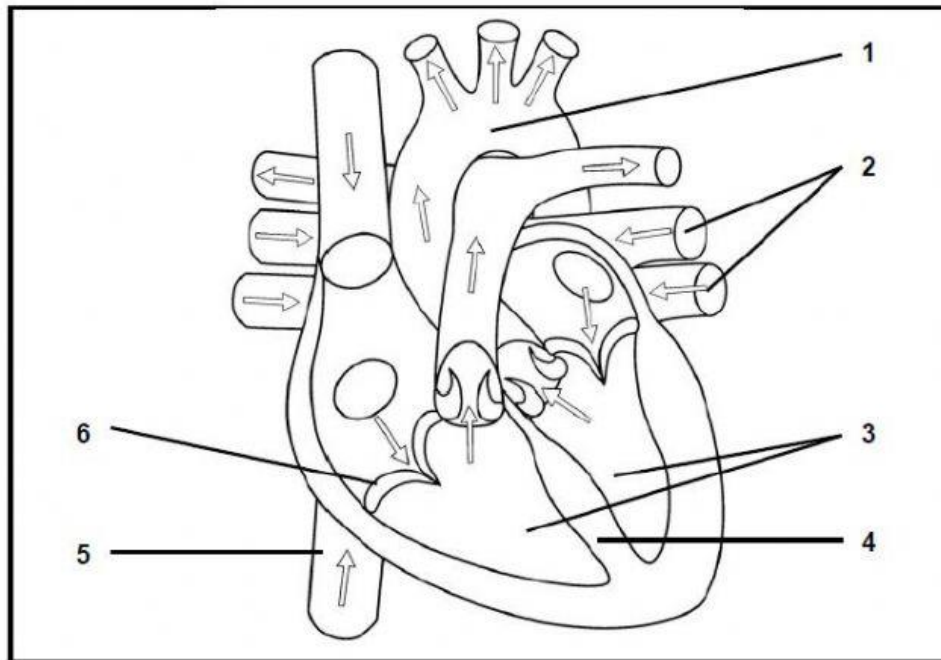
1.2 Give the correct BIOLOGICAL TERM for each of the following descriptions.

- 1.2.1 The type of muscle that the heart consists of
- 1.2.2 Pigment found in red blood cells
- 1.2.3 Lymph fluid when it leaves the blood vessels and bathes the cells
- 1.2.4 Slowing down of body processes when temperatures drop
- 1.2.5 Height above sea level
- 1.2.6 A rise in the average temperature on Earth
- 1.2.7 The removal of trees from a particular area
- 1.2.8 Massive sections of the Earth's crust that move as a single piece
- 1.2.9 Fossil plants thought to be responsible for the coal deposits in Southern Africa (9 x 1) (9)

COLUMN I		COLUMN II	
1.3.1	Blood vessel with walls only one cell layer thick	A:	Vein
		B:	Artery
1.3.2	Abiotic factors	A:	Predation
		B:	Aspect
1.3.3	Ethical ecotourism	A:	Buy illegal wildlife products
		B:	Pick up litter
1.3.4	Evidence for continental drift	A:	Transition fossils
		B:	Biogeography

(4 x 2) (8)

1.4 The diagram below shows the internal structure of a human heart.



1.4.1 Identify parts 1, 4 and 6.

(3)

1.4.2 Where is the blood at 2 coming from?

(1)

1.4.3 Name the process that occurs when the structures at 3 contracts together.

(1)

1.4.4 Describe the oxygen content of the blood in structure number 5.

(1)

1.5 The table below shows the timescale of a part of Earth's history.

MYA	Era	Period	Fossils
298–251	Paleozoic	Permian	Trilobites, Ammonites, Fish, Animals with shells, Sponges, Jellyfish, Land plants, Corals, Amphibians, Insects, many more reptiles, Cone bearing plants
323–298		Pensylvanian	Trilobites, Ammonites, Fish, Animals with shells, Sponges, Jellyfish, Land plants, Corals, Amphibians, Insects, Reptiles
358–323		Mississippian	Trilobites, Ammonites, Fish, Animals with shells, Sponges, Jellyfish, Land plants, Corals, Amphibians, First insects, First reptiles
419–358		Devonian	Trilobites, Ammonites, Fish, Animals with shells, Sponges, Jellyfish, Land plants, Corals, Insects, First amphibians
443–419		Silurian	Trilobites, Ammonites, Fish, Animals with shells, Sponges, Jellyfish, Land plants, Corals
485–443		Ordovician	Trilobites, Ammonites, Fish, Animals with shells, Sponges, Jellyfish, First land plants
541–485		Cambrian	Trilobites, First fish, First animals with shells, Sponges, Jellyfish

1.5.1 Which ...

(a) period saw the arrival of the first land plants? (1)

(b) group of animals survived the longest in this era? (1)

1.5.2 What do we call a timescale like the one above? (1)

1.5.3 In which period above did an explosion (a large increase) in the number and diversity of fossils in the fossil record occur? (1)

1.5.4 Scientists may use different layers of rock to work out if a new fossil was formed before or after a particular geological event. What do we call this method of dating fossils? (1)

1.5.5 Scientists may use fossils like Ammonites to help them date other fossils found in the same layer. What do we call fossils like the Ammonites and others that help scientists to do this? (1)

1.5.6 What do we call a scientist who studies fossils? (1)

TOTAL SECTION A: 50