SBI3U Unit 5 Test: Plants – Structure & Function
(50 Marks Total)

Name:_____

Signature:_____

Marks obtained:

Category	Total Marks	Possible Marks
Knowledge/Understanding (K/U)		**10**
Thinking/Investigation (T/I)		**15**
Communication (C)		**5**
Application (A)		**20**
Total		**50**
Percentage		

SECTION 1: Knowledge/Understanding - Multiple Choice (Questions 1-10)

[K/U, 10: 1 each]

Write your section 1 answers here:

Question	1	2	3	4	5	6	7	8	9	10
Answer										

K/U	T/I	A	C
/10			

Name:

****NOTE: FOR SECTIONS 1 WRITE YOUR ANSWERS IN THE TABLES ON THE FIRST PAGE OF THIS TEST****

SECTION 1: Knowledge/Understanding - Multiple Choice (Questions 1-10)

[K/U, 10: 1 each]

1. Which specialized organs of a plant perform photosynthesis?

   a) flowers
   b) leaves
   c) root
   d) shoots
   e) bark

2. In which layer(s) of a leaf does the majority of photosynthesis take place?

   a) upper epidermal layer
   b) palisade mesophyll layer
   c) spongy mesophyll layer
   d) lower epidermal layer
   e) all layers equally

3. The large central root of a carrot is an example of which type of root system?

   a) adventitious
   b) taproot
   c) aerial
   d) fibrous
   e) none of the above

4. The diploid form in a plant's life cycle is called the:

   a) sporophyte.
   b) parental generation.
   c) gametophyte.
   d) alternate generation.
   e) diploidy generation.

5. The vascular bundles of dicot stems are arranged

   a) in rings surrounded by ground tissue.
   b) scattered throughout ground tissue.
   c) in pith scattered throughout ground tissue.
   d) in cortex scattered throughout ground tissue.
   e) In cortex surrounding parenchyma tissue.

6. Which accurately describes the movement of sugars inside a plant?

   a) Sugars are transported in the xylem according to the cohesion-tension model.
   b) Sugars are transported in the phloem from the roots to the leaves for winter storage.
   c) Sugars are transported using a combination of osmosis and pressure dynamics.
   d) Sugars are transported by transpiration.
   e) Sugars are transported into the roots by diffusion

7. Which statement best describes a monocot?

   a) Roots have vascular tissue arranged in a star shape.
   b) Leaf veins are usually palmate or pinnate.
   c) Flowers are in four or five parts, or multiples of four or five.
   d) It has a woody stem.
   e) It typically has fibrous roots

8. Which of the following characteristics best describes perfect flowers?

   a) They contain pistils and stigma.
   b) They contain stigma and style.
   c) They contain stamen and pistils.
   d) They contain pollen and sepals.
   e) They have multiples of three leaves

9. Which of these structures is the outcome of reproduction in angiosperms?

   a) flower
   b) seed
   c) apple
   d) pollen
   e) spermatocyte

10. Parallel venation in a leaf is evidence that a plant is of which type?

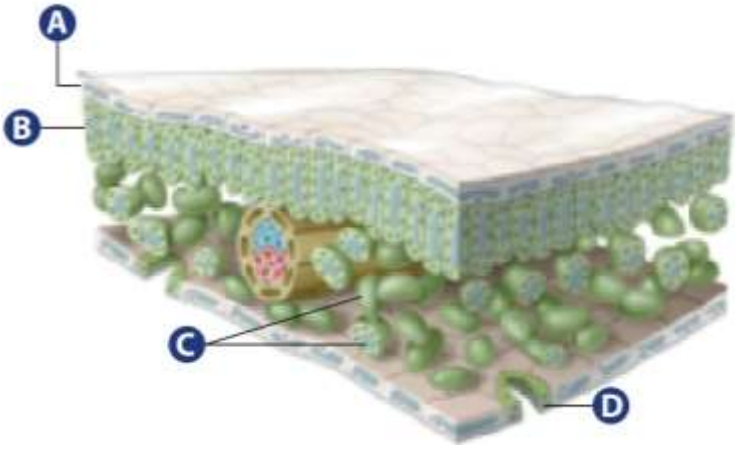
    a) non-vascular
    b) woody
    c) monocot
    d) dicot
    e) herbaceous

Name: _____

SECTION 2: Application - Labeling (Questions 11-12)

[A, 8: 1 each]

11. Label the following cross-section of a leaf:



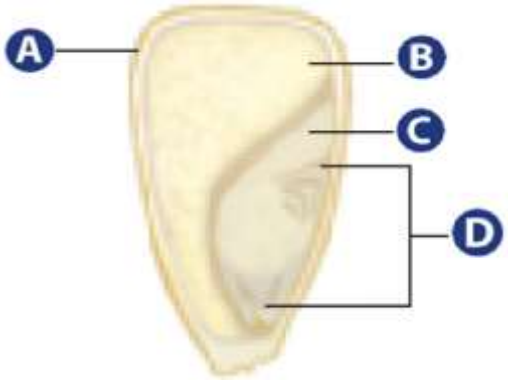
A _____

B _____

C _____

D _____

12. Label the following parts of a seed:



A _____

B _____

C _____

D _____

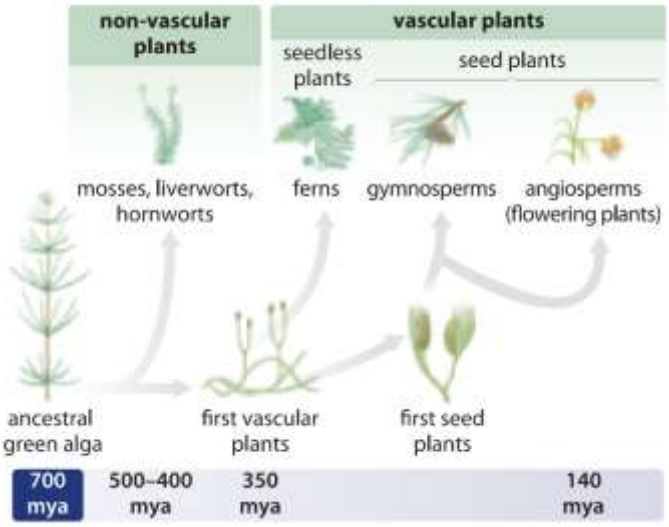
SECTION 3: Thinking/Investigation, Application, Communication – Short Answer (Questions 13-20)

[T/I, 11; A, 13; C, 5]

13. The roofs of abandoned buildings, parking lots, and old stone walls often display signs of succession. Explain which form of succession is most likely and how and why this is the case. *[A, 3]*

K/U	T/I	A	C
		/11	

14. Is it likely that the first seed plants evolved before the first vascular plants did? Why or why not? Explain your answer with reference to the diagram below and use structure of vascular and non-vascular plants to support your answer. *[A, 6]*



15. Predict what would happen to the health of a plant if its xylem or phloem were damaged. Give at least 3 reasons to explain your prediction. *[T/I, 4]*

K/U	T/I	A	C
	/4	/6	

16. Why does running over weeds with a lawnmower make the weed problem worse? Give at least 3 reasons. *[T/I, 3]*

17. In the small intestine of humans, the surface area for the absorption of water and nutrients is increased by the presence of small projections on the surface of the cells called microvilli. What structure in plants serves a similar purpose? Explain. *[T/I, 4]*

18. Describe the possible effects on a plant reproduction if its stamen is removed during flowering stage of plant growth. Explain a possible solution and why it would work. *[T/I, 3]*

K/U	T/I	A	C
	/11		

19. Use a graphic organizer to compare and contrast the movement of sugar and water in a plant. Include at least 1 similarity and 2 differences. Appropriateness of choice graphic organizer is worth 2 points.
[C, 5]

20. In most parts of the world, commercial potato crops are produced asexually by planting tubers. However, in some regions of the world, such as in southeast Asia and in the Andes of Peru, some potatoes are grown from true seeds. Describe the advantages and disadvantages of growing potatoes from seeds rather than from tubers. *[A, 3]*

K/U	T/I	A	C
		/3	/5