



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF NATURAL AND APPLIED SCIENCES

QUALIFICATION: BACHELOR OF SCIENCE	
QUALIFICATION CODE: 07BOSC	LEVEL: 6
COURSE NAME: PLANT STRUCTURE AND FUNCTION	COURSE CODE: PSF602S
SESSION: JANUARY 2020	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

SUPPLEMENTARY / SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
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INSTRUCTIONS	
<ol style="list-style-type: none">1. Write clearly and neatly2. Number the answers clearly3. All written work MUST be done in blue or black ink4. No books, notes and other additional aids are allowed5. Mark all answers clearly with their respective question numbers	

PERMISSIBLE MATERIALS

None

THIS QUESTION PAPER CONSISTS OF 5 PAGES
(Including this front page)

QUESTION 1:

Multiple choices

[5]

- 1.1 Which of the following is true of the formation of both arbuscules and root nodules? (1)
- a) invasion of a plant root by a fungus
 - b) strigolactones produced by the root are recognized by the microbe
 - c) root cells are invaded but there is no direct contact between plants and microbes cell contents
 - d) root cells are invaded but there is direct contact between plants and microbes cell contents
- 1.2 Which sequence represents the size of soil particles from largest to smallest? (1)
- a) sand, clay, silt
 - b) silt, clay, sand
 - c) sand, silt, clay
 - d) clay, silt, sand
- 1.3 Which of these is an indirect defense? (1)
- a) secondary chemical
 - b) making a predator think that butterfly eggs are already on the leaves
 - c) inviting ants to live on a plant
 - d) all of these are correct
- 1.4 The daily change in the orientation of the prayer plant's leaves is an example of; (1)
- a) solar tracking
 - b) a nyctinastic movement
 - c) a thigmonastic movement
 - d) gravitropism
- 1.5 The transport of food from the leaves to the rest of the plant is called _____. (1)
- a) translocation
 - b) transpiration
 - c) active transport
 - d) osmosis

QUESTION 2:

Fill in the blanks

[3]

- 2.1 A growth response of plants in which the direction of growth is determined by the direction from which a stimulus comes is called a(n) _____ . (1)
- 2.2 Because of _____, the seeds and buds of many plants delay growth until they have been exposed to a certain number of hours of cold temperatures. (1)

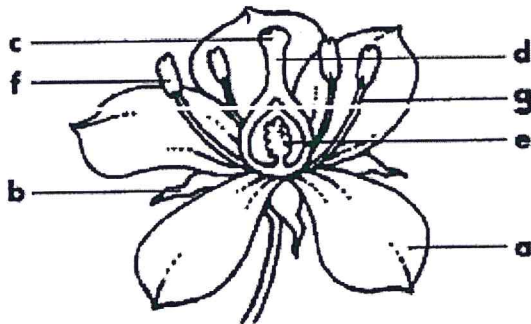


Figure -1

2.3 Refer to the diagram (figure 1) above. The structure labelled f is called the _____ . (1)

QUESTION 3:

Define the following terms

[3]

3.1 Seed dormancy

(1)

3.2 Circadian rhythm

(1)

3.3 Apomixis

(1)

QUESTION 4:

Distinguish between the pairs of the following terms.

[6]

4.1 Stolon; rhizome

(2)

4.2 Actinomorphic; zygomorphic flower

(2)

4.3 Phytochrome; cryptochrome

(2)

QUESTION 5:

One-sentence answers

[4]

5.1 What is wood and inner bark of the stem made of?

(1)

5.2 What is the seat of origin of lateral root and cambium?

(1)

5.3 Mention two ways of absorption of water in plants?

(1)

5.4 What is the value of water potential of pure water at normal temperature and

pressure?

(1)

QUESTION 6:

Short questions

[17]

6.1 Write two observations about the seed in the following picture (Figure – 2).

(2)



Figure - 2

6.2 Provide the correct term for the following statements;

(3)

- (a) The formation of a new generation of plants from one parent only.
- (b) The swollen underground stem of a potato.
- (c) The joining of two compatible plants so that the tissues of the two plants grow or merge together.

6.3 What are the four components of soil, and how is each important to plants?

(4)

6.4 What kind of fruit is the sunflower, barley, rice and explain?

(4)

6.5 Explain how varying amounts of light and darkness induce flowering.

(4)

QUESTION 7:

Longer questions

[25]

7.1 Describe the zones of primary growth in roots.

(5)

7.2 Mention any five uses of leaves that is used by human being for day today life.

(5)

7.3 Discuss five diversity of underground stems by giving examples of several adaptations.

(5)

7.4 Distinguish between vascular cambium and cork cambium and describe the tissues that arise from each.

(5)

7.5 Give five anatomical difference between dicot root and monocot root.

(5)

QUESTION 8:

[10]

Structures and functions

8.1 Drawing the internal structure of dicot seeds and label its parts. (5)

8.2 Use the diagram (figure – 3) to answer each question. The diagram below shows the stem of a coleus plant.

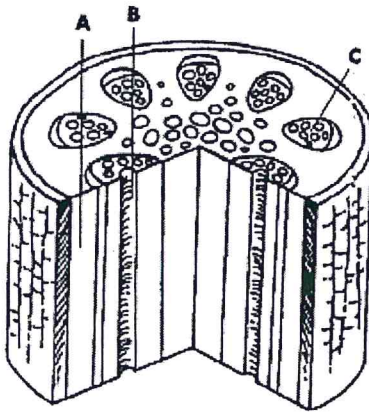


Figure - 3

8.2.1 Refer to the illustration above. The tissue labeled A, and C is called as; (2)

8.2.2 The bark on a woody stem is made up of _____ and _____. (2)

8.2.3 The center region of ground tissue in an herbaceous stem is known as the _____. (1)

QUESTION 9:

Essay question

[27]

9.1 Discuss the pressure–flow model of sugar translocation in phloem. (15)

9.2 Explain the mechanism of opening and closing of the stomata. (12)

THE END