

GWANDA STATE UNIVERSITY



FACULTY OF LIFE SCIENCES

DEPARTMENT OF CROP SCIENCE

BACHELOR OF SCIENCE HONOURS DEGREE IN CROP SCIENCE

LCS 1203 PLANT BIOLOGY

END OF SEMESTER EXAMINATION

SEPTEMBER 2021

This examination paper consists of 5 pages

Time Allowed: 3 hours
Total Marks: 100
Special Requirements: None
Examiner's Name: Dr. T Goche

INSTRUCTIONS

1. Answer **all** questions in Section A
2. Answer **TWO (2)** questions in Section B

MARK ALLOCATION

QUESTION	MARKS
SECTION A	60
SECTION B	40
TOTAL ATTAINABLE MARKS	100

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SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

1. _____ are small discs found within the chloroplast that contain components important for photosynthesis.
 - a. Carotenoid
 - b. Lamella
 - c. Thylakoid
 - d. Stroma

2. The red, orange, and yellow pigments found in plants are called:
 - a. Carotenoids
 - b. Stroma
 - c. Chlorophyll
 - d. Chloroplast

3. The overall source of energy for photosynthesis is:
 - a. energy from NADPH
 - b. energy released when water is split and oxygen is produced
 - c. energy from ATP
 - d. light energy from the sun

4. An organic compound formed in the dark reaction of photosynthesis is
 - a. Triose phosphate
 - b. chlorophyll
 - c. oxygen
 - d. water

5. Most plants appear green because chlorophyll
 - a. absorbs green light
 - b. absorbs violet light
 - c. does not absorb green light
 - d. does not absorb violet light

6. Which structures are found in all living cells?
- a. cell membranes and cell walls
 - b. cell walls and ribosomes
 - c. ribosomes and cell membranes
 - d. A and B
7. Which organelle is found in plant cells and not in animal cells?
- a. chloroplast
 - b. mitochondria
 - c. nucleus
 - d. None of the above
8. In biological systems, the term osmosis involve the movement of:
- a. water
 - b. solutes
 - c. energy
 - d. Both A and B
9. A plant cell placed in water will:
- a. swell up and become turgid
 - b. shrink
 - c. lose water and become flaccid
 - d. shrink and die
10. The coleoptile in grass seedling is
- a. radicle
 - b. plumule
 - c. cotyledon
 - d. sheath around emerging leaf
11. The auxins are abundantly produced in
- a. shoot
 - b. root
 - c. meristematic region of shoot
 - d. meristematic region of root

[22]

12.

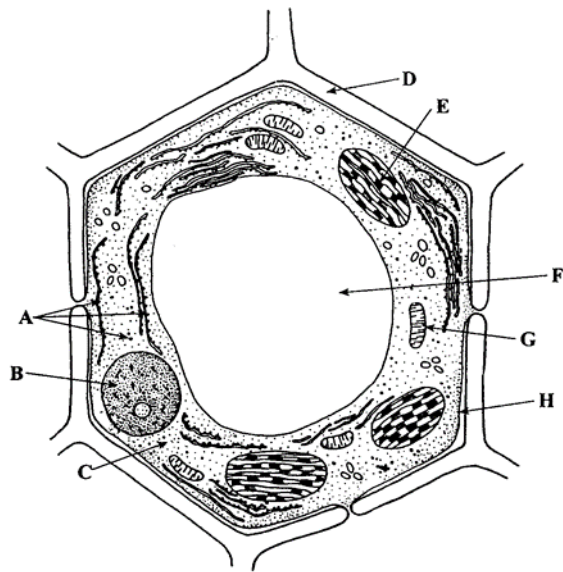


Fig 1

Using Fig 1, complete the following table

Structure	Name of structure	Function or purpose
A		
B		
C		
D		
E		
F		
G		
H		

[18]

13. Write short notes on the following:

- a) photoperiod
- b) meristems
- c) apical dominance
- d) acid growth theory

[20]

SECTION B: ANSWER ANY TWO QUESTIONS IN THIS SECTION

14. Discuss the use of artificial plant growth regulators in Agriculture. [20]

15. a) Describe mechanisms of seed dormancy [10]

b) Explain the significance of seed dormancy in plant ecology and agriculture [10]

16 a) Describe double fertilization. (5)

b) State and explain the conditions that are required for seeds to be vernalized [5]

c) One role of fruits is to aid in seed dispersal. Describe two different ways that fruits aid in dispersal by i) abiotic factors, ii) biotic factors. [4]

d) What are the differences between simple, aggregate, and multiple fruits? [6]

END OF EXAMINATION PAPER