

PARUL UNIVERSITY
FACULTY OF AGRICULTURE

B.Sc. (Hons.) Agriculture Winter 2019 - 20 Examination

Semester: 2

Date: 18-12-2019

Subject Code: 20110153

Time: 2:00 pm to 4:30 pm

Subject Name: Fundamentals of Crop Physiology

Total Marks: 50

Instructions

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Do as Directed.**A. Fill in the blanks. (Each of 0.5 marks)****(05)**

1. NADP⁺ is reduced to NADPH in _____
2. Minerals absorbed by root move to the leaf through _____
3. The substrate for photorespiration is _____
4. Transpiration pull theory was proposed by _____
5. Example for CAM plants is _____
6. Fluid mosaic model of plasma membrane was proposed by _____
7. The cell without cell wall is called as _____
8. Opening and closing of stomata due to _____
9. The unit of inheritance is _____
10. Middle lamella is made up of _____

B. Multiple choice type questions. (Each of 0.5 marks)**(10)**

1. Reduction of CO₂ to glucose takes place in _____

a) Grana	c) Mitochondria
b) Stroma	d) None
2. Photosynthetic pigment present in _____

a) Grana	c) Mitochondria
b) Stroma	d) Thylakoids
3. Membrane surrounding the Vacuole is _____

a) Grana	c) Tonoplast
b) Stroma	d) Thylakoids
4. The most widely accepted theory for ascent of sap in trees is _____

a) Root pressure	c) Turgor pressure
b) Transpiration Pull theory	d) None
5. The cell organelles containing genetic material in the plant cells are _____

a) Nucleus	c) Chloroplast
b) Mitochondria	d) All of the above
6. Photosynthetic pigments found in the chloroplasts occur in _____

a) Phytochrome	c) PS 1
b) Cytochrome	d) None
7. Dark reactions of photosynthesis occur in _____

a) Grana	c) Stroma
b) Thylakoids	d) None
8. light reactions of photosynthesis occur in _____

a) Grana	c) Stroma
b) Thylakoids	d) None
9. Ferredoxin is a constituent of-

a) PS-1	c) PS-II
b) PS-III	d) None
10. Guttation is mainly due to _____

a) Hydathodes	c) Root pressure
b) Stomata	d) None
11. Cell theory was proposed by _____

a) Schleiden	c) Both
b) Schwann	d) None

12. Cell was first discovered by_____
- a) Schleiden
b) Schwann
c) Robert Hook
d) None
13. Lysosomes are formed from_____
- a) Golgy bodies
b) Endoplasmic reticulum
c) Nucleus
d) None
14. Photorespiration in cell takesplace in_____
- a) Golgy bodies
b) Endoplasmic reticulum
c) Nucleus
d) Peroxisomes
15. Double membrane organelles in the cells are_____
- a) Chlorplast
b) Mitochondria
c) Nucleus
d) All of the above
- 16 cells are exist from the pre existing cells are given by_____
- a) Schleiden
b) Schwann
c) Robert Hook
d) Rudolf Virchow
17. Photosynthetic units are_____
- a) Grana
b) Thylakoids
c) Quantasomes
d) All of the above
18. The net ATP production during Glycolysis process is_____
- a) 3
b) 4
c) 2
d) 5
19. The place where the Kreb's cycle takes place in plants is_____
- a) Cytoplasm
b) Nucleus
c) Mitochondrial Matrix
d) Golgibodies
- The first carbon dioxide acceptor in C₄-plants is
- a) OAA
b) PMA
c) PGA
d) None

Q.2 Do as Directed.

A. Define the following. (Any five)

(05)

1. Stomata
2. Endosmosis
3. Mass flow
4. Osmosis
5. Photorespiration
6. Photolysis of water
7. Diffusion

B. Answer the following. (Any Five)

(05)

1. Active absorption
2. Passive absorption
3. Photosynthesis
4. Respiration
5. Crop physiology
6. Exosmosis
7. Plasmodesmata

Q.3 Write short notes. (Any five)

(10)

1. Explain the difference between C₃ and C₄ mechanisms in plants?
2. Explain the importance of crop physiology in agriculture?
3. Explain the hill's reaction of photosynthesis?
4. Explain the difference between light and dark reaction of photosynthesis?
5. Write down difference between prokaryote and eukaryote cells?
6. Explain the fluid mosaic model of plasma membrane?

Q.4 Attempt any Three/Long Questions/Example

(15)

1. Explain the C₃ cycle and mention its significance in plants?
2. Explain Transpiration pull theory with its merits and demerits?
3. Explain the Kreb's cycle process in plants?
4. Explain the glycolysis process in plants?