

Bachelor of Science (B.Sc.) Semester—V (New & Old) Examination

BOTANY(New)

Optional Paper—1

(Biochemistry and Plant Physiology—I)

Time : Three Hours]

[Maximum Marks : 50

Note :— (1) All questions are compulsory and carry equal marks.

(2) Draw well labelled diagrams wherever necessary.

1. Write on :—

(a) Beta oxidation

(b) Nomenclature of enzymes.

5×2=10

OR

Write short notes on :—

(c) Lock and Key Model

(d) Holoenzyme and Apoenzyme

(e) Induced fit model

(f) Role of fatty acids.

2.5×4=10

2. Write on :—

(a) K⁺–Malate hypothesis

(b) Munch hypothesis.

5×2=10

OR

Write notes on :—

(c) Diffusion

(d) Cohesion-Adhesion theory

(e) Osmosis

(f) Root pressure theory.

2.5×4=10

3. Write on :—

(a) Kreb's Cycle

(b) Role and deficiency of N and Fe.

5×2=10

OR

Write short notes on :—

(c) ETS (Diagrammatic representation only)

(d) Photorespiration

(e) Glycolysis (Diagrammatic representation only)

(f) Respiratory Quotient.

2.5×4=10

4. Write on :—

(a) HSK pathway and its significance

(b) Biological nitrogen fixation.

5×2=10

OR

Write short notes on :—

(c) CAM pathway (Diagrammatic representation only)

(d) Importance of nitrate reductase

(e) Cyclic photophosphorylation

(f) C₃-pathway. (Diagrammatic representation only)

2.5×4=10

5. Write in **two** or **three** lines only.

Diagrams are not necessary (Any **ten**):—

(a) Peptide bond

(b) Co-factor

(c) Disaccharides

(d) Guard cells

(e) Turgor Pressure

(f) Imbibition

(g) Chlorosis.

(h) Micronutrients

(i) Alcoholic fermentation

(j) Reaction centre

(k) Red drop

(l) Photosynthetic pigments.

1×10=10

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Optional Paper—1

(Biochemistry and Plant Physiology—I)

Time : Three Hours]

[Maximum Marks : 50

Note :— (1) All questions are compulsory and carry equal marks.

(2) Draw well labelled diagrams & write example wherever necessary.

1. Write on :—

- (a) Nomenclature of enzymes 5
- (b) Induced fit model 5

OR

Write short notes on :—

- (c) Monosaccharides
- (d) Characteristics of enzyme
- (e) Lock & Key Model
- (f) Co-enzyme and Co-factor. 2.5×4=10

2. Write on :—

- (a) K⁺–Malate hypothesis 5
- (b) Munch Hypothesis of food translocation. 5

OR

Write short notes on :—

- (c) Properties of water
- (d) Diffusion and its significance
- (e) Osmosis
- (f) Root pressure theory. 2.5×4=10

3. Write on :—

- (a) Fermentation 5
- (b) Kreb's Cycle. 5

OR

Write short notes on :—

- (c) Role of P and Mn
- (d) EMP-pathway (Outline only)
- (e) Oxidative phosphorylation
- (f) Photorespiration (Outline only). 2.5×4=10

4. Write on :—

(a) Non-cyclic Photophosphorylation 5

(b) Biological nitrogen fixation. 5

OR

Write short notes on :—

(c) Types and role of photosynthetic pigments.

(d) Cyclic electron transfer

(e) Calvin cycle (Outline only)

(f) CAM Pathway. 2.5×4=10

5. Write in **two** or **three** lines only.

Diagrams are not necessary (Any **ten**):—

(a) Waxes

(b) Aldolases

(c) Apoenzyme

(d) Imbibition

(e) Ascent of Sap

(f) Stomatal transpiration

(g) Donnan's equilibrium

(h) Respiratory Substrate

(i) ATP

(j) Photosynthesis

(k) Emerson effect

(l) Nitrate reductase. 1×10=10