

NRT/KS/19/2141

Bachelor of Science B.Sc. Semester–V Examination
BIOCHEMISTRY AND PLANT PHYSIOLOGY–I (Old & New)
Optional Paper—1 (Old)
(Botany)

Time : Three Hours]

[Maximum Marks : 50

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

(2) Draw well labelled diagrams and give examples wherever necessary.

1. Write on :

- (a) Structure of Glucose and Starch. 5
(b) Induced fit model of enzyme action. 5

OR

Write short notes on : 2.5×4

- (c) Amino acids in protein
(d) Properties of enzyme
(e) Holoenzyme
(f) Lock and Key model.

2. Write on :

- (a) Cohesion adhesion theory 5
(b) Munch Hypothesis. 5

OR

Write short notes on : 2.5×4

- (c) Osmosis and its significance
(d) K⁺ malate hypothesis
(e) Root pressure theory.
(f) Properties of water.

3. Write on :

- (a) Role and deficiency symptoms of N & Fe. 5
(b) Glycolysis. 5

OR

Write short notes on : 2.5×4

- (c) Carrier concept
(d) Kreb's cycle (Outline only)
(e) Alcoholic fermentation
(f) Photorespiration.

4. Write on :

- (a) Calvin cycle 5
- (b) Symbiotic Nitrogen fixation. 5

OR

Write short notes on : 2.5×4

- (c) Significance of photosynthesis
- (d) Cyclic photophosphorylation
- (e) Emerson effect
- (f) HSK – pathway.

5. Write in **two** to **three** lines only. Diagrams are not necessary (any **10**) : 1×10

- (a) Sterols
- (b) Apoenzyme
- (c) Co-enzyme
- (d) Diffusion
- (e) Imbibition
- (f) Transpiration
- (g) Trace elements
- (h) ATP
- (i) RQ
- (j) Red drop
- (k) CAM plants
- (l) Photosynthesis.

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[Maximum Marks : 50

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

(2) Draw well labelled diagrams wherever necessary.

1. Write on : 5×2

- (a) Nomenclature of Enzymes
- (b) Enzyme substrate complex theory.

OR

Write short notes on : 2.5×4

- (c) Properties of enzymes
- (d) Beta oxidation (Diagrammatic representation only)
- (e) Lock and key model
- (f) Oils and waxes

2. Write on :

- (a) Diffusion and osmosis. 5×2
- (b) K⁺ malate hypothesis.

OR

Write short notes on : 2.5×4

- (c) Root pressure theory.
- (d) Munch hypothesis
- (e) Properties of water
- (f) Cohesion-Adhesion theory.

3. Write on

- (a) Role and deficiency of N and P 5×2
- (b) EMP pathway.

OR

Write short notes on : 2.5×4

- (c) Donnan's equilibrium
- (d) TCA-Cycle (outline only)
- (e) Photorespiration
- (f) Carrier concept.

4. Write on :

(a) Calvin cycle.

5×2

(b) CAM Pathway

OR

Write short notes on :

2.5×4

(c) Root nodule formation

(d) Photosynthetic pigments and its role

(e) C-4 pathway (outline only)

(f) Emerson's enhancement effect.

5. Write in **two/three** lines only, diagrams are not necessary (any **ten**) :

1×10

(a) Monosaccharides

(b) Amino acids

(c) Holoenzymes

(d) Imbibition

(e) D.P.D.

(f) Turgor pressure.

(g) Micronutrients

(h) R.Q.

(i) Fermentation

(j) Nitrate reductase

(k) Photophosphorylation

(l) Photolysis.