

4. (a) Discuss the role of light in induction and biosynthesis of melatonin hormone. (8)

(b) How is RuBP regenerated during the Calvin cycle? Explain with the help of a schematic representation of the cycle. (7)

5. (a) What is the ecological significance of the CAM cycle. (7)

(b) Write a short note on Ultra Violet light. (5)

(c) How sunlight gets diminished (attenuated) inside water. (3)

6. (a) Briefly explain the four important characteristics of circadian rhythms. Give two examples of circadian rhythms. (7)

(b) Write brief notes on any **two** : (2×4=8)

(i) Reaction Centres and their importance

(ii) Cyclic Photophosphorylation

(iii) Plant Pigments

(200)

Your Roll No.....

Sr. No. of Question Paper : 1035

D

Unique Paper Code : 6792011102

Name of the Paper : Photobiology

Name of the Course : **B.Sc. (H) Biological Sciences**

Semester : I

Duration : 2 Hours Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. This paper contains **six** questions. Answer any **four** questions.
3. Question **1** is compulsory.
4. **All** parts of a question should be answered together.
5. Attempt each new question on a fresh page.

1. (a) Define : (5×1=5)

(i) Photoperiod

(ii) Light Harvesting Complex

P.T.O.

- (iii) Zeitgeber
 - (iv) Action Spectrum
 - (v) Serotonin
- (b) Expand the following : (5×1=5)
- (i) RUBISCO
 - (ii) DNP
 - (iii) SCN
 - (iv) HIOMT
 - (v) CPDs
- (c) Give major contributions of the following scientists : (5×1=5)
- (i) Robert Hill
 - (ii) Garner and Allard
 - (iii) Dubois
 - (iv) Aaron Lerner
 - (v) Colin S. Pittendrigh

2. (a) Comment Briefly (**any five**) : (5×2=10)
- (i) Life in its present form on our planet is unimaginable without the photosynthetic activity of green plants.
 - (ii) RUBISCO acts as a carboxylase as well as oxygenase.
 - (iii) The flowering in plants is affected by its photoperiod.
 - (iv) Tryptophan rich diet is important for healthy sleep cycles.
 - (v) People at high altitude get sunburnt easily.
 - (vi) Marine bioluminescence is blue in color.
3. (a) Explain the dermal chromatophore unit with the help of a suitable diagram. (5)
- (b) Discuss the physiological effects of Phytochrome. With the help of a diagram, explain the mechanism of gene action of phytochrome. (10)
- (b) Write a note on photoreceptors in animals. (5)