MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester	**: III (New)**	**Term**	**: I**	**Academic Year**	**: 2016-17**
Course No.	**: BOT-234**	**Title**	**: Crop Physiology**		
Credits	**: 3(2+1)**				
Day & Date	**: Friday, 11.11.2016**	**Time**	**: 9.00 to 12.00**	**Total Marks**	**: 80**

Note : 1. Solve **ANY EIGHT** questions from **SECTION "A"**.
2. All questions from **SECTION "B"** are compulsory.
3. All questions carry equal marks.
4. Draw neat diagrams wherever necessary.

SECTION "A"

Q.1 Define crop physiology. Explain in brief the scope and importance of crop physiology in agriculture.

Q.2 Define plant hormones, enlist their types and write in brief the physiological role of auxin and cytokinin.

Q.3 What is transpiration? What are its different types? Explain the factors that affect the rate of transpiration.

Q.4 What is water use efficiency? Explain the practices followed for its improvement.

Q.5 Define respiration. Explain reactions of Kreb's cycle with neat diagram.

Q.6 Write short notes (Any four).

1) Photorespiration
2) Vernalisation
3) CAM Plants
4) Photoperiodism
5) Phloem loading and unloading

Q.7 Define growth and growth analysis. Explain the phases of growth and give the formulae for NAR and LAI.

Q.8 Discuss Arnon's criteria for essentiality of plant nutrients. Write the functions and deficiency symptoms of N, P, K and Mg.

Q.9 a) What are the climacteric and non-climacteric fruits? Explain in brief maior physiological and biochemical changes during fruit ripening.

b) Write factors affecting storage of fruits.

Q.10 Distinguish between (Any two).

1) Transpiration and Guttation
2) Cyclic photo-phosphorylation and Non- Cyclic photo-phosphorylation
3) Osmosis and Diffusion
4) Abscission and Senesence

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SECTION "B"

Q.11 A) Define the following terms.

1) Apical dominance
2) Field capacity
3) Diffusion pressure deficit
4) Photosynthesis

B) State True or False.

1) IAA is root promoting hormone.
2) Water potential is negative in the plant system.
3) Inner wall of guard cell of stomata is thick.
4) Semi-permeable membrane is not required in diffusion.

Q.12 Fill in the blanks.

1) The end product of anaerobic respiration is _____.
2) Sugarcane is an example of _____ plant.
3) O_2 released during photosynthesis comes from _____.
4) Initiation of plasmolysis is called _____.
5) _____ is the main enzyme responsible for CO_2 fixation in C_3 pathway.
6) Value of pressure potential is _____when cell is under flaceed condition.
7) _____ is a ripening hormone.
8) Root hair is _____ cellular organ.

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