

Library
Date - 20/04/2019
BioTech Sem-VI

Applied Component **AGRICULTURE**
AGRI BIOTECHNOLOGY

Duration: 3 hours

Total marks: 100

Note:

1. All questions are compulsory.
2. All questions carry equal marks.
3. Draw neat and labelled diagrams wherever necessary.
4. Figures to the right indicate full marks.

- Q. 1. A. Do as directed: (any 6): 6
- (i) Define: Greenhouse.
 - (ii) Give one limitation of protected cultivation.
 - (iii) Name any two glazing materials.
State true or false:
 - (iv) Steam is a superior option over chemical fumigation in a greenhouse.
 - (v) Placing black coloured stones in a greenhouse will cause retention of heat inside it.
 - (vi) Low-pressure mist system is a heating system technique.
 - (vii) In Ladakhpolyhouse, mud brick walls are constructed only on three sides.
 - (viii) In double-walled polyencl., thermocol is used as an insulating material.
 - (ix) In cold arid regions, carbon dioxide content is very high.
- B. Answer the following: (any 2): 14
- (i) State the advantages of protected cultivation.
 - (ii) Give an account of the soil with reference to the management of a greenhouse.
 - (iii) Give an account of Underground greenhouse.
- Q. 2. A. Do as directed: (any 6): 6
- (i) Give one effect of flooding stress in plants.
 - (ii) Define: Photoinhibition.
 - (iii) Name two chilling sensitive plants.
 - (iv) Give one beneficial effect of bacterial interaction with plants.
State true or false:
 - (v) The most important response towards hot stress is irreversible denaturation of proteins.
 - (vi) Under light-limited conditions, the rate of photosynthesis becomes light-independent.
 - (vii) Desert area plants survive environmental stress by altogether escaping it.
 - (viii) Water deficiency leads to enlargement of plant cells.
 - (ix) Heat stress sensitive plants tend to have a higher proportion of saturated fatty acids.
- B. Answer the following: (any 2): 14
- (i) Explain: Too much light inhibits photosynthesis.
 - (ii) Give an account of fungal pathogenic interaction with plants.
 - (iii) Write a note on cold stress.



- Q.3. A. Answer the following: (Any 6): 6
- (i) What are the 3 major types of genetic markers?
 - (ii) What is Linkage Disequilibrium?
 - (iii) Name the chemical used to prevent Herbarium from fungal attack & degradation in humid tropical climate.
 - (iv) Mention one objective of QTL mapping.
 - (v) One benefit of DNA barcode.
 - (vi) What is the major disadvantage of Biochemical Markers?
 - (vii) Mention any one Salient requirement of QTL mapping?
 - (viii) Mention any one application of DNA Database.
 - (ix) Mention the full form RAPDs.
- B. Answer in brief:(Any 2) 14
- (i) Write a note on RFLP & SNP
 - (ii) What is QTL mapping?
 - (iii) Elaborate on matK
- Q.4. A. Answer the following: (Any 6): 6
- (i) Name the protein responsible for adhesion of rhizobium to legume roots.
 - (ii) *Arbuscularmycorrhizal* belongs to _____ phylum.
 - (iii) Which are the various key metabolic process affected by Phosphorus in plants?
 - (iv) Nitrogen fixation is catalysed by which enzyme?
 - (v) Give one example of chlorinated hydrocarbons used against crop pests.
 - (vi) _____ is the most abundant of the known organophosphorus compound in soil.
 - (vii) Give one application of AM fungi.
 - (viii) Give one advantage of Biofertilizers.
 - (ix) What are Arbuscules?
- B. Answer in brief: (Any 2) 14
- (i) Describe Symbiotic Nitrogen Fixers.
 - (ii) Explain with suitable example the plant growth promotion by Fungi.
 - (iii) What are PSM?
- Q.5. Write short notes on: (any four): 20
- (i) Fan and pad cooling system
 - (ii) Effect of water stress on membrane damage
 - (iii) Importance of sunlight in management of a greenhouse
 - (iv) Types of DNA markers
 - (v) Phytohormone: IAA.
 - (vi) *B. thuringiensis*

