RAIGAD - IV (2010 Course) : SUMMER - 2017

Subject : Plant Biotechnology

Day : Friday
Date : 07/04/2017

34740

Time : 10.00 AM TO 01.00 PM
Max Marks : 80 Total Pages : 1

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw well labelled diagram **WHEREVER** necessary.

SECTION-I

Q.1 A) Attempt Any **ONE** question of the following: **(06)**

a) Give an account on history of Plant Biotechnology.
b) Briefly describe the technique of Plant Tissue Culture and write a note on its advantages and limitations.

B) Explain diagrammatically Any **ONE** of the following technique. **(10)**

a) Dicot seed culture for the establishment of aseptic seedlings.
b) *In vitro* propagation of orchids.
c) Plant regeneration via direct organogenesis from stem cultures of *Citrus*.

Q2 Attempt Any **FOUR** of the following: **(16)**

a) What is nutrient media? Enlist components of media and explain their importance.
b) Meristem culture is a tool for the production of virus free plants. Justify.
c) Name different types of plant organ cultures and describe their applications.
d) What is micropropagation? Discuss different strategies for plant regeneration.
e) Describe *in vitro* techniques for plant genetic improvement.

SECTION-II

Q.3 A) Answer Any **ONE** of the following: **(06)**

a) Briefly discuss methods for gene transfer in plants.
b) Explain the technique of producing GM plant resistant to insects.

B) Answer Any **TWO** of the following: **(10)**

a) What are molecular markers? Describe their applications.
b) Describe strategies used to optimize secondary metabolite yield in cultures.
c) Discuss various techniques for conservation of germplasm.

Q.4 Write a short note on Any **FOUR** of the following: **(16)**

a) Artificial seeds production technology.
b) Importance of Greenhouse in tissue culture industry.
c) Concept of totipotency.
d) Importance of somaclonal variants.
e) Genetically engineered plants.

Q.5 Define **All** of the following: **(16)**

a) Re-differentiation
b) Natural propagules
c) *Ex- vitro* rooting
d) Synchronization
e) Explant
f) Somatic embryogenesis

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