

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2016

(CUCSS)

Botany

BO 04 ET 13 (05)—PLANT TISSUE CULTURE

(2010 Admissions)

Time : Three Hours

Maximum : 36 Weightage

I. Answer all the *fourteen* questions very briefly :

- 1 Explain the role of hardening in tissue culture.
- 2 What is incubation ?
- 3 What are surface **sterilants** ? Give an example.
- 4 Write a critical account on **protoplast** culture.
- 5 Comment on role of hormones in **phytomorphogenesis**.
- 6 What is a semisolid medium ?
- 7 Mention the role of additives in a tissue culture medium ?
- 8 Explain contamination.
- 9 What is virus indexing ?
- 10 What are **macronutrients** ?
- 11 Explain the term cellular **totipotency**.
- 12 What do you mean by vitrification ? How is it rectified ?
- 13 Describe what is aseptic condition.
- 14 Define a callus.

(14 x 1 = 14 weightage)

II. Answer any *seven* questions in not more than 100 words :

- 15 Write an account on clonal propagation.
- 16 Explain **somaclonal** variation.
- 17 What are synthetic seeds ? Explain their production and importance.
- 18 Differentiate dedifferentiation and **redifferentiation**.
- 19 What is soma clonal variation ? What are its advantages ?
- 20 Explain the role of **PCR** technique in tissue culture.
- 21 Give an account on subculturing. Explain its significance.

Turn over

22 What is clonal propagation ?

23 Explain the role of tissue culture in flower crops.

24 How are haploids produced through tissue culture ? What is its advantage ?

(7 x 2 = 14 weightage)

III. Answer any *two* questions in 300 words each :

25 Explain the techniques and significance of protoplast culture.

26 What are secondary metabolites ? Describe the achievements in the area of secondary metabolite production.

27 Describe how bioreactors are used in micropropagation.

28 Write an account on the history and latest advancements in tissue culture.

(2 x 4 = 8 weightage)