

# MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR

## B. Sc. BIOTECHNOLOGY II YEAR TDC (2016-17)

### B. Sc. II<sup>nd</sup> Year Practicals

#### Practical – I

##### (A) Principles of Plant Tissue Culture

1. To study the principle and working of various instrument used in plant tissue culture.
2. To study the methodology and preparation of M S media containing various plant growth regulators of different concentration.
3. To study *in vitro* seed germination in *Feronia limonia*.
4. To study the preparation of various types of explant from the aseptically raised seedling.
5. To study methodology and preparation and sterilization of nodal explant for establishment of culture.
6. To study the characteristics of callus on the parameters of
  - (i) Colour and texture
  - (ii) Packed and volume
  - (iii) Fresh weight and dry weight
  - (iv) Cell viability test
7. Preparation of cell suspension culture and determination of cell count by Haemocytometer.
8. Test of cell viability in cell suspension culture.
9. Encapsulation of somatic embryos of the shoot bud.
10. To demonstrate the role of Gibberellic acid in *in vitro* shoot elongation.
11. To demonstrate the role of sucrose as carbon source in plant tissue culture.
12. To demonstrate the role of Nitrogen in Plant Tissue Culture.
13. To demonstrate the effect of Auxins in root induction.
14. To calculate the rate of *in vitro* shoot multiplication and growth performance.
15. To calculate stomatal characteristics for *in vitro* raised plantlets.
16. To calculate percent water loss from the leaves of micropropagated plants.

##### (B) Principles of Animal Cell Culture

1. To prepare media for animal cell culture (Undefined media: Chick embryo extract, chick plasma, chick serum).
2. Preparation of single cell suspension from spleen and thymus.
3. Fusion of cells by polyethylene glycol (PEG).