Practical module 1

1. Isolation of DNA from Gram negative and Gram positive bacteria.
2. Isolation of DNA from different plant tissues.
3. Isolation of DNA from animal tissues.
4. Isolation of DNA from blood.
5. Isolation of DNA from yeast/fungi.
6. Isolation of DNA from soil.
7. Isolation of plasmid.
8. Preparation of competent cells and transformation with plasmid.
9. Cloning and selection of mutant.
10. Transposome study
11. Demonstration of PCR reaction.
12. Sequence alignment using BLAST
13. Demonstrate use of RASMOL
14. Demonstrate application of NCBI
15. Applications of gene bank.

Practical module 2

1. Nutrient composition of Murashige & Skoog's (MS) medium and its composition
2. Preparation of stock solutions of MS medium
3. Requirements and preparation of medium for initiation of callus from different explants
4. Subculturing of callus and intiation of multiple shoots/organs (Organogenesis
5. Somatic embryogenesis induction and development of somatic embryos from callus
6. Study of anther culture.
7. Demontration of mitosis
8. Short term leucocyte culture and its requirements
9. Metaphase chromosome preparation
10. Demontration of banding pattern in metaphase chromosomes
11. Polytene chromosome preparation
12. Sex chromosome detection in buccal smear
13. Histochemical localization of enzymes
14. localization of mitochondria, lysozomes and nucleic acids