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M.Sc. Examination, 2022
Semester - III
Biotechnology
Course: XV (Laboratory-III)
(Genetic Engineering, Animal and Plant Biotechnology)

Time: 6 hrs × 2 days

Full Marks: 80

1. Briefly describe the principle, methodology and precaution of any one of the following tissue culture experiments in detail. You have to demonstrate the respective technique properly in presence of examiners:

- a) Embryo culture for supplied plant material (A)
- b) Anther culture for supplied material (B)

2.5+5+2.5+10=20

2. Perform MTT assay with the samples provided and assess the percent reduction of cellular dehydrogenase activity. Show your calculation and results properly.

10+10=20

- 3. a) Briefly describe the protocol for digestion of a piece of DNA with a restriction enzyme.
- b) Briefly describe the protocol for transformation of *E. coli* cells with plasmid DNA using CaCl₂ method.

10+10=20

4. Viva-voce. 10

5. Submission and evaluation of practical record copies. 10