ST. JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAM

III SEMESTER **BIOTECHNOLGY** TIME:2Hrs/Week

BTH-Ma1-3751 (2) **PLANT AND ANIMAL BIOTECHNOLOGY** Max.Marks: 50

W.e.f. 2023-24 admitted batch (23AK)  **PRACTICAL SYLLABUS**

**OBJECTIVES:** To enable the students to –

1. Acquire the techniques and inoculation methods in plant tissue culture.
2. Gain the basic idea about the animal tissue culture
3. Familiarize on quantitative estimation of both antigens of HIV

**COURSE OUTCOMES: Students will**

* **CO1:** Attain Be expertise in formulating the concentrations of tissue culture media

constituents

* **CO2:** Be proficient Capable to identify the economized protocols for both the classical &

hybrid varieties, with the available tissue culture concepts.

* **CO3:** Be Able to breed the haploid cultivars and enhance vegetative propagation,

virus free stocks, flexible to current agriculture practice

* **CO4:** Be expertise in analyzing the clinical samples through immunodiagnostic methods.

1. **COURSE:**
2. Plant culture media and composition of MS media
3. Raising of aseptic seedlings
4. Induction of callus from different explants
5. Plant propagation through Tissue culture (shoot tip and Nodal culture)
6. Establishing a plant cell culture (both in solid and liquid media)
7. suspension cell culture
8. Cell count by hemocytometer.
9. Establishing primary cell culture of chicken embryo fibroblasts.
10. Animal tissue culture –maintenance of established cell lines.
11. Animal tissue culture –virus cultivation.
12. Estimation of cell viability by dye exclusion (Trypan blue).
13. ELISA –Demonstration
14. **REFERENCES**
15. Introduction to Plant Tissue Culture..M.K. Razdan ,2003,Science Publishers
16. Plant Tissue Culture, kalyan Kumar De,199 M7,New Central Book Agency
17. Plant Tissue Culture : Theory and Practice By S.S. Bhojwani and A. Razdan,1998
18. Biotechnology – By U. Satyanarayana ;1997
19. Plant Cell, Tissue and Organ Culture, Applied and Fundamental Aspects By Y.P.S. Bajaj and A. Reinhard ,2001
20. Introduction to Plant Tissue Culture,M. K. Razdan, 2003,Science Publishers
21. A Textbook of Biotechnology,R C Dubey,S. 2014,Chand Publishing
22. Elements of Biotechnology,P. K. Gupta, 1994,Rastogi Publications
23. R. Ian Freshney, “Culture of animal cells –A manual of basic techniques” 4thedition, John Wiley & Sons, 2000 ,Inc, publication, New York
24. Daniel R. Marshak, Richard L. Gardner, David Gottllieb “Stem cell Biology” edited by Daniel 2001,Cold Spring Harbour Laboratory press, New York
25. M.M. Ranga, Animal Biotechnology; Agrobios (India) ,2006.
26. **CO-Curricular Activities**

a) **Suggested Co-Curricular Activities**

1. Assignments
2. Seminars, Group Discussions on related topics
3. Charts on different medias
4. Visit to plant tissue culture lab

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