Register Number: …….

M.TECH. DEGREE EXAMINATIONS: JANUARY 2011

First Semester

BIOTECHNOLOGY

BTY503: Plant and Animal Biotechnology

Time Three Hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 2 = 20 Marks)

1. Why embryogenesis is preferred over organogenesis for plant regeneration?
2. What are plant-derived pharmaceutical proteins? Give 2 examples.
3. Define replacement vectors.
4. What is the role of T-DNA border sequences?
5. Distinguish differentiation from dedifferentiation with an example.
6. How established cell lines acquire the characteristics of longevity?
7. Define heterosis with suitable example.
8. Why *in vitro* fertilization is adopted in animal breeding?
9. What is the rationale behind the narcotic properties of phyto alkaloids?
10. Name the types of cytokine receptors.

PART B (5 x 16 = 80 Marks)

11. (a) Write in detail on the techniques for immobilization of plant cells. **(OR)**

    (b) Elucidate the principle, structure and functions of phytohormones.

12. (a) Describe the gene transformation through Biolistic gun method. **(OR)**

    (b) Draw a neat sketch and elaborate on the cointegrate and binary vectors.

13. (a) Explain the principle and therapeutic applications of Tissue engineering. **(OR)**

    (b) How monoclonal antibodies are produced using hybridoma technology?

14. (a) Describe the *in vitro* fertilization and embryo culture of animal cells. **(OR)**

    (b) What is animal cloning? Add a note on its ethical implications.

15. (a) What are interferons? Draft a protocol for its production and isolation. **(OR)**

    (b) What are natural plant products? Mention the classification and isolation techniques.

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