**Reg. No. \_\_\_\_\_\_\_\_**

**Karunya University**

**(Karunya Institute of Technology and Sciences)**

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec - 2016**

**Subject Title : PLANT TISSUE CULTURE Time : 3 hours**

**Subject Code: 12BI250 Maximum Marks: 100**

#### **Answer ALL questions**

**PART – A (10 x 1 = 10 MARKS)**

1. Name the scientists who developed MS media.

2. The part of the plant used for tissue culture is known as \_\_\_\_\_\_\_\_\_\_

3. Methods used in protoplasmic fusion are \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_.

4. Give any two examples of artificial seeds produced from transgenic plants.

5. State the advantages of direct DNA transfer method in plants.

6. What is T-DNA?

7. What are somoclonal variations?

8. Write about crop improvement introduced through PTC in sugarcane.

9. A typical auxin used in plant tissue culture is \_\_\_\_\_\_\_\_\_\_\_.

10. \_\_\_\_\_\_\_\_\_\_\_ variation helps in crop improvement.

**PART B(5 X 3= 15 MARKS)**

11. Write a brief note on RAPD markers with suitable examples.

12. What does hardening in plant tissue culture refer to?

13. Write the applications of somatic embryogenesis.

14. Give short notes on horizontal resistance.

15. Comment on therapeutic proteins applications with suitable examples.

**PART – C (5 x 15 = 75 MARKS)**

16. Discuss in detail about the mitochondrial genome structure with example.

(OR)

17. Give a brief account of marker-aided breeding with usage of RFLP maps.

18. Write short note on: (5x3)

a. Protoplast b. viability test c. Protoplast fusion

d. Cybrids e. Artificial seeds

(OR)

19. Explain in detail the somatic embryogenesis and give a note on its applications.

20. Give a detailed account on role of reporter genes and selectable markers in gene transfer.

(OR)

21. Explain in detail about *Agrobacterium* mediated gene transfer in plants with a neat diagram.

22. Write an essay about mutagenesis and somoclonal variation.

(OR)

23. Elaborate the applications of gametoclonall variation methods.

24. What are the techniques employed in gene transfer? Explain any two in detailed illustration.

(OR)

25. List out the various benefits of transgenic plants in crop improvement.