



**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions: (15x2=30)**

1. What we meant by axenic culture?
2. Define the term bioreactor and they are used?
3. Differentiate between defined and undefined medium; give 2 examples of each?
4. What are secondary metabolites give examples?
5. Enlist at least 2 natural and synthetic auxins.
6. Differentiate between in vivo and in vitro cultures?
7. Define the term “Redifferentiation”?
8. What we meant by organogenesis?
9. Differentiate between hybrid and cybrids.
10. Why Phenolic compounds hinder plant growth?
11. Define the term acclimatization.
12. Why leaf material is treated with pectinase during protoplast isolation?
13. Antibiotic and antifungal compounds are not recommended to control contamination in plant tissue culture, give reason?
14. What is an explant with respect to plant tissue culture?
15. Differentiate between inoculation and incubation.

**Answer the following questions. (6x5=30)**

**Question #2-** how we can assess the viability of cells in suspension culture formation?

**Question #3-** Describe agricultural application of Plant Tissue Culture.

**Question #4-** Describe a plant tissue culture lab: materials and equipment’s used for this sophisticated technique.

**Question #5-** What are Principal applications of anther culture?

**Question #6-** Describe various growth regulators used in tissue culture medium also enlist their synthetic and natural forms.

**Question #7-** Write down complete procedure for preparation of 1000 ml Morishige and Skoog medium.