

Also referred to as micropropagation, Tissue culture is a technique wherein fragments of plant or animal tissues are cultured and grown in a laboratory. In some instances, the organs are also used for tissue culture. For the growth of culture, the media used is agar and broth.

Tissue culture is used to produce disease-free plants to enhance plant yield. Requirements for tissue culture is a greenhouse, a sterile workplace, a nursery, and trained staff. Eggplant, oil palm, tomato, pineapple, banana, plantain, rubber tree, sweet potato have been produced by tissue culture in developing countries.

There are two main types of cultures:

- Primary Culture
- Cultures of established Cell Lines

**1. Which of the following statement is incorrect about agar?**

- (a) Remains stable at incubation temperature
- (b) Does not react with media constituents
- (c) Does not use in micropropagation work
- (d) Not digested by plant enzymes

**Answer: (c)**

**2. In tissue culture system, this is the main effect of cytokines**

- (a) shoot elongation
- (b) adventitious root formation
- (c) induction of somatic embryos
- (d) adventitious shoot formation

**Answer: (d)**

**3. This is not a basic component of culture media for plant cultivation**

- (a) amino acids
- (b) sucrose/sugar
- (c) a complex mixture of salts
- (d) serum albumin

**Answer: (d)**

**4. Which of the following plant propagation method uses girdling?**

- (a) cuttings
- (b) grafting
- (c) layering
- (d) both (a) and (b)

**Answer: (c)**

**5. The ability of single cells to divide and produce all differentiated cells in the entity.**

- (a) Totipotency
- (b) Multipotent
- (c) Pluripotent
- (d) Unipotent

**Answer: (a)**

**6. Which of the following is the first transgenic crop?**

- (a) flax
- (b) tobacco
- (c) plastic
- (d) cotton

**Answer: (b)**

**7. Which of the following is not a feature of plant cells?**

- (a) Consists of plastids
- (b) Cell wall outside the cell membrane
- (c) Presence of centrioles
- (d) Cell-cell communication through plasmodesmata

**Answer: (c)**

**8. Which of the following is a superbug?**

- (a) virus
- (b) bacteria
- (c) transgenic plant
- (d) worms

**Answer: (b)**

**9. This is a cellular totipotency property.**

- (a) plants
- (b) animals
- (c) virus
- (d) none of the above

**Answer: (a)**

10. Growth of plant tissues in artificial media is called \_\_\_\_\_.

- (a) cell hybridization
- (b) plant tissue culture
- (c) transgenesis
- (d) gene expression

**Answer: (b)**

