



UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Sixth Semester – 2020

Paper: Plant Tissue Culture (Advance Course)

Course Code: BOT-315 Part – I (Compulsory)

Time: 15 Min. Marks: 10

Roll No. in Fig.

Roll No. in Words.

Signature of Supdt.:

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.

Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the correct choice.

(1x10=10)

1. Laminar Air Flow is used for
 - a) Sterilization of liquid media
 - b) Aseptic transfer of media and cultures
 - c) Callus incubation
 - d) a, b and c are correct
2. An unorganized growth of cells is called as
 - a) Callus
 - b) Tissue
 - c) Explants
 - d) Callose
3. The major contaminant/s in PTC growth media is/are
 - a) Bacteria
 - b) nematodes
 - c) Fungi
 - d) both bacteria or fungi
4. Microspores are used to produce
 - a) Diploid plants
 - b) Hybrid plants
 - c) Haploid plants
 - d) None of a, b, or c
5. The excised and isolated piece of plant tissue is termed as
 - a) Explant
 - b) hybrid
 - c) Callus
 - d) Protoplast
6. The tissue culture media can be solidified by adding
 - a) Agar
 - b) Sucrose
 - c) Fructose
 - d) Malt extract
7. The quantity of vitamins used in Plant Tissue Culture is usually measured in
 - a) mM
 - b) nM
 - c) cm
 - d) mm
8. Electro-fusion is used in
 - a) Callus cultures
 - b) Protoplast cultures
 - c) Embryo culture
 - d) Anther cultures
9. Dry heat is used to sterilize
 - a) Media
 - b) Glass ware
 - c) Vitamins
 - d) Hormones
10. Glass beads in an electrical sterilizer are usually used to
 - a) Sterilize surgical instruments
 - b) Sterilize Seeds
 - c) Sterilize Embryos
 - d) Sterilize any explant



ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

QUESTIONS WITH BRIEF ANSWERS

20 Marks

Q2. Answer briefly the following questions. Each question carries two marks.

1. What is the importance of sterilization in Plant Tissue Culture?
2. Enlist major inorganic nutrients in Plant Tissue Culture media.
3. How will you differentiate between Somatic and Zygotic embryogenesis?
4. What is the role of hormones in Callus Cultures?
5. Write down the main steps involved to raise Cell Suspension Cultures.
6. What is the importance of Plant Tissue Culture in research work?
7. Give the importance of Agar in tissue culture media.
8. How would you prepare Pathogen-free plants using tissue culture means?
9. Give two advantages of tissue culture technology.
10. What is importance of Haploid cultures?

SUBJECTIVE QUESTIONS

(30 Marks)

Q3. Answers the following questions.

1. What is sterilization? Describe various methods of sterilization in plant tissue culture. **10 Marks**
2. Describe various steps involved in initiation of callus cultures. **10 Marks**
3. Write note on **10 Marks**
 - A) Organogenesis
 - B) Ovule Culture