Exam Date & Time: 04-May-2024 (02:30 PM - 05:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

DEPARTMENT OF BIOTECHNOLOGY
VI SEMESTER B.TECH BIOTECHNOLOGY
END SEMESTER EXAMINATIONS, APRIL-MAY 2024

ANIMAL PLANT BIOTECHNOLOGY AND BIOETHICS [BIO 3251]

Marks: 50 **Duration: 180 mins.**

A

Answer all the questions.

Instructions to Candidates: Answer ALL questions Missing data may be suitably assumed

1) You are being appointed as an intern in India's top biotech company.As a part of the selection procedure you need to fill the following table.Give your correct response in the following format

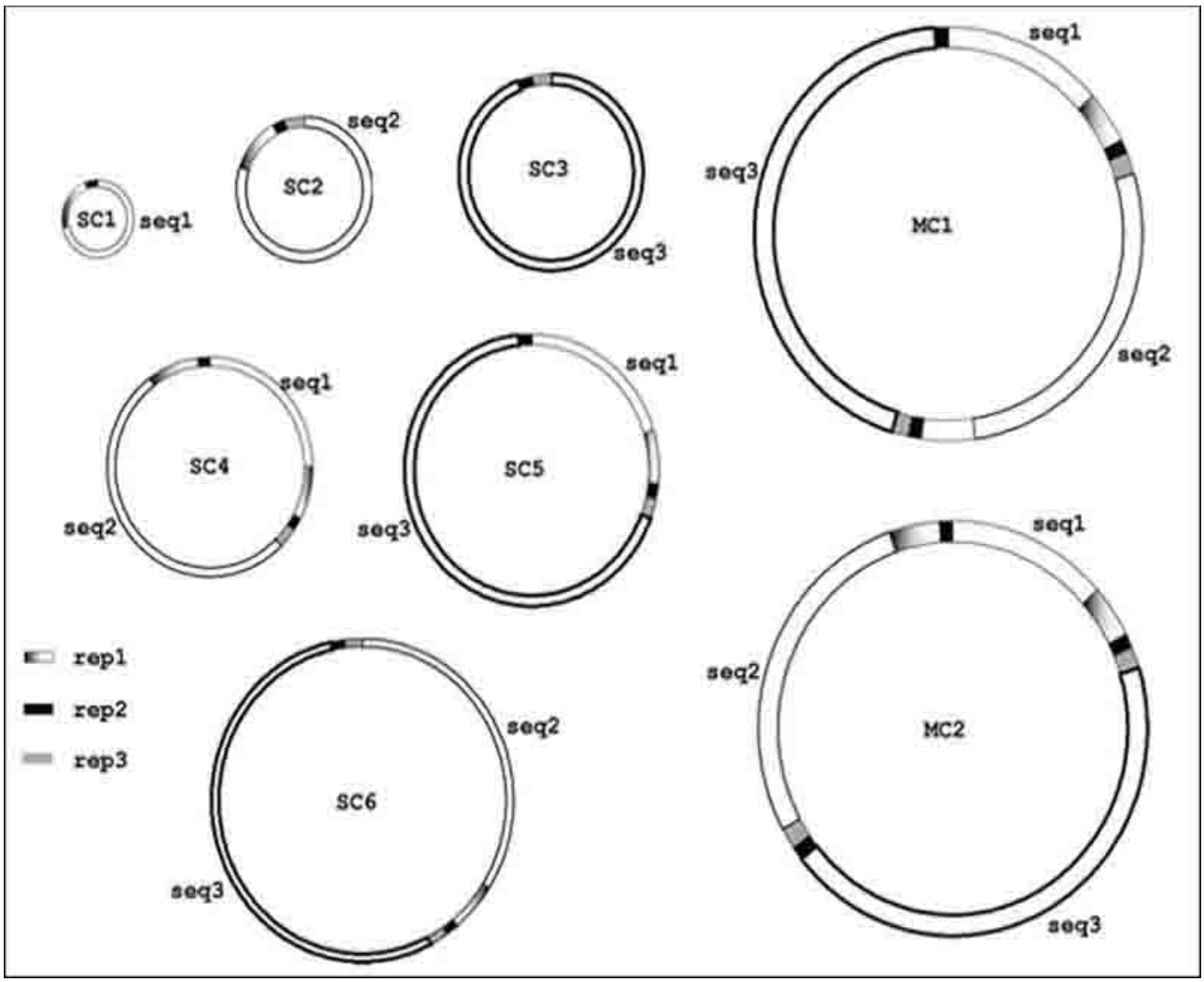
A)

Property Discussed	Plant Cells	Animal Cells
Adherence		
Potency		
Growth regulation		
Redifferentiation and Dedifferentiation		

(4)

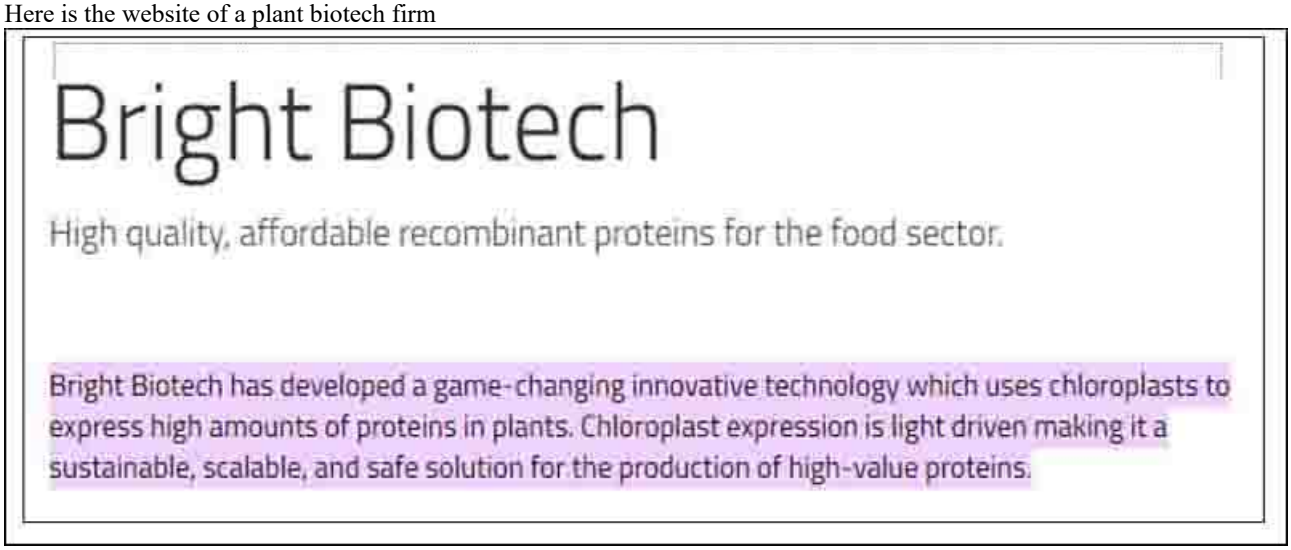
B) A student has illustrated a genome in the following way:

(3)



(1) The genome belongs to_____
(2) Mention two trademarks of this genome
(3) Prepare a foot note for the above illustration

C) Here is the website of a plant biotech firm



(3)

Why chloroplast? Give three convincing logical justifications

2) Given below is the photograph illustrating the in vitro clonal propagation strategy

(4)

A)

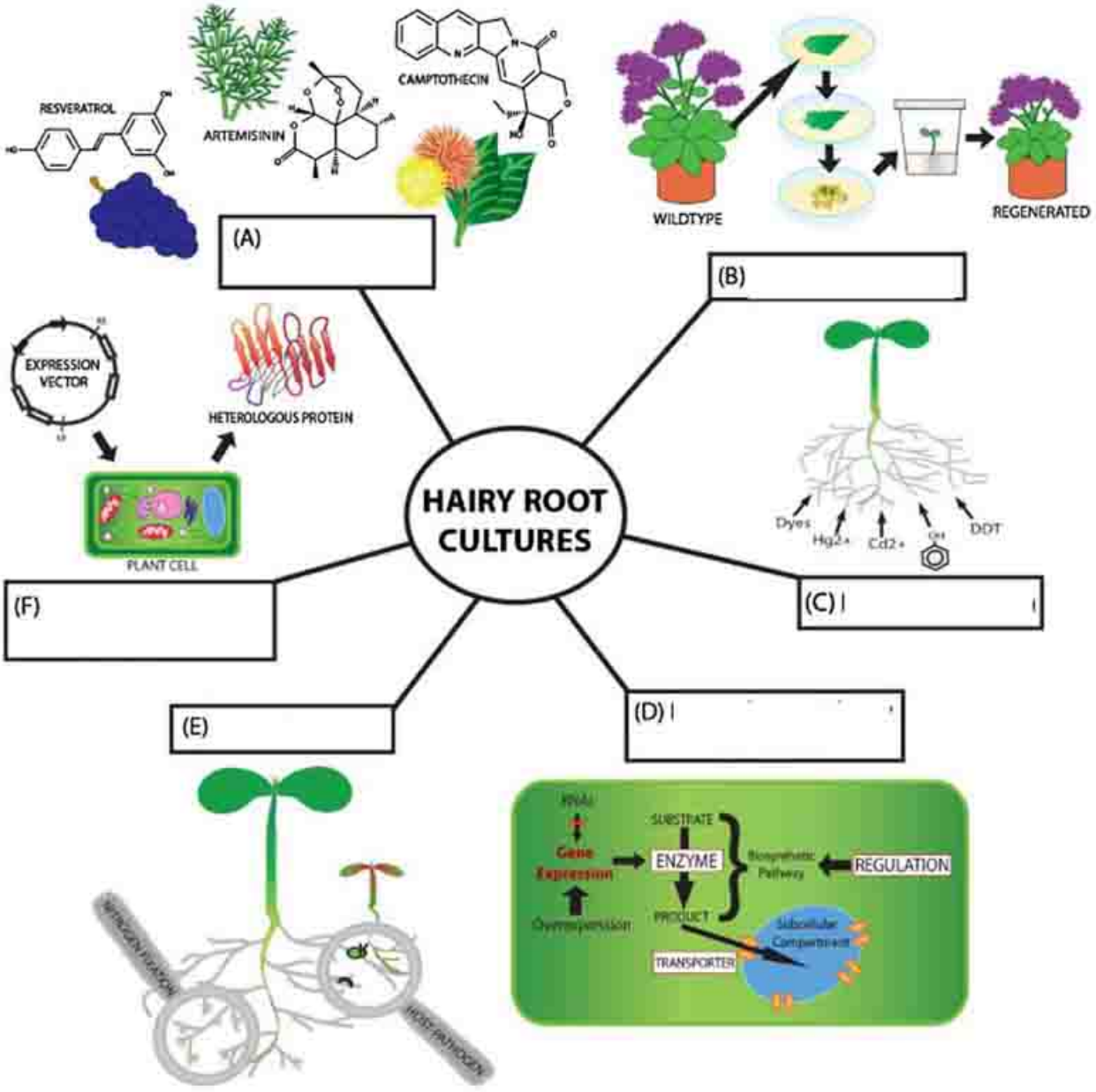
Now give proper response in the following format

Question	Response	Justification
Ideal explant for this technique		
Growth regulator regime for the stage E		
What is there in stage F and G		
How can you say clones for the plant lets derived through this technique?		

B) What is the importance of the following cultures?

(3)

C) Ms Kavitha has prepared a graphical abstract for hairy root cultures. Fill each boxes and explain them



(3)

3) (A) Complete the following table

(5)

A)

Sl No.	Chemical	Application in Plant Biotechnology
1	DMSO	
2	Tungsten	
3	Silicon carbide	
4	Calcium divalent cation	
5	DEAE Dextran	
6	Phenyl Alanine	

(B) Construct a Ti Plasmid for the gene "ABCD" suitable for Agrobacterium transformation. Illustrate the Plasmid.

B) Compare different types of ventilation devices with respect to personal, product and environmental protection (3)

C) Identify any four endogenous fluorophores and mention their applications (2)

4) Discuss various methods involved in the preparation of primary culture (5)

A)

B) Summarize the process of cryopreservation (3)

C) Name any two animal cell culture collection center (2)

5) Analyze various techniques for the measurement of cell viability and cytotoxicity (5)

A)

B) Compare patent and trade secrets (3)

C) Identify the three global regulatory agencies involved in the approval of agricultural and microbial products, animal and human vaccines and cosmetics (2)

-----End-----