2018/ODD/09/28/BTY–301/033

PG Odd Semester (CBCS) Exam., December—2018

BIOTECHNOLOGY

(3rd Semester)

Course No. : BTYCC–301

(Tissue Culture—Plants and Animal)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Define tissue culture. Discuss the principle and significance of tissue culture in plants and animals. What measures should be taken to avoid contaminations in tissue culture? 2+6+6=14

OR

2. Differentiate between explant culture and suspension culture. Write about the logic of formulation with special reference to natural media, synthetic media and sera. 5+9=14

3. What is a nutrient medium? Write about the obligatory and optional constituents of a commonly used medium with suitable example. 2+12=14

OR

4. What is meant by plant growth regulator? Write the mechanism of action of auxin and cytokinin in an *in vitro* system of culture. 2+6+6=14

5. Discuss the characteristics of transformed cell lines. Add a note on histotypic cultures. 8+6=14

OR

6. Write notes on the following : 4+5+5=14

(*a*) Freeze storing of cells

(*b*) Importance of serum in cell culture

(*c*) Steps in animal cell culture

7. What is the principle of stem cell culture? Write a note on embryonic stem cells and their applications in tissue engineering. 2+6+6=14

OR

8. What is organogenesis? Write the process of organogenesis. Distinguish between organogenesis and embryogenesis. 2+6+6=14

9. What is phenolic browning? How can the problem of phenolic browning be addressed in plant tissue culture? 4+10=14

OR

10. What is somaclonal variation? Discuss the factors responsible for somaclonal variation. Describe the methods of developing disease-resistant and flood-tolerant plants using somaclonal variation. 2+5+7=14

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