

TKN/KS/16–5940

**Fourth Semester B. Sc. Biotechnology  
Examination**

**Paper – II**

**PLANT AND ANIMAL BIOTECHNOLOGY**

Time : Three Hours ]

[ Max. Marks : 50

- N. B : (1) All questions are compulsory and carry equal marks.  
(2) Draw diagrams wherever necessary.

1. What is callus ? Describe callus culture technique. 10

**OR**

Write short notes on :—

- (a) Macro nutrients. 5  
(b) Surface sterilization in PTC. 5

2. Describe in detail production of haploid plant by Anther culture technique. 10

**OR**

Write short notes on :—

- (A) Bt–cotton 5  
(B) Ti –Plasmid 5

3. Give in detail components of animal cell culture media and their role. 10

**OR**

Write note on :—

- (a) Cell–cell communication. 5  
(b) Maintenance of cell lines. 5

4. Write a note on :—

- (a) Production of Insulin by recombinant DNA technology. 5  
(b) In-vitro fertilization in humans. 5

**OR**

Write a note on :—

- (a) Gene therapy. 5  
(b) Transgenic animals. 5

5. Solve any **Ten** :—

- (i) What is thermostable hormone ? 1  
(ii) What is the role of disodium EDTA in plant tissue culture media ? 1  
(iii) What is an explant ? 1  
(iv) What is micropropagation ? 1  
(v) What is somatic hybridization ? 1  
(vi) Name any two auxins. 1  
(vii) What is trypsinization ? 1

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- (viii) What are immortal cells ? 1
- (ix) What is cell senescence ? 1
- (x) Give two examples of recombinant vaccines. 1
- (xi) What is the role of somato statin ? 1
- (xii) Give any two uses of IVF in farm animals. 1