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- Notes : 1. All questions are compulsory and carry marks as indicated.
2. Draw diagram wherever necessary.

1. Define Animal cell culture? Discuss in detail materials required for animal cell culture. **16**

OR

Write a details account on different culture medium. **16**

2. Describe different methods of separation of cell types and its advantages. **16**

OR

a) Explain three dimensional cultures. **8**

b) What is primary culture? Explain properties and utility of suspension culture. **8**

3. Explain in details tissue engineering and tissue modelling. **16**

OR

Write note on followings.

a) Cell manipulation. **8**

b) Cell synchronization. **8**

4. Discuss in detail invitro fertilization technology with respect to embryo cloning. **16**

OR

Describe mass production of vaccines and cytotoxicity test to determine the safety. **16**

5. Write notes on:

a) Cell-cell communication. **4**

b) Cell adaptation. **4**

c) Stem cell culture. **4**

d) Xenotransplantation. **4**
