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Question Paper Code: UC601

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Professional Elective

Biotechnology

21BTV601 ANIMAL BIOTECHNOLOGY

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (10 x 2 = 20 Marks)

1. How scale-up process is carried out in suspension cell culture? CO1 U
2. Write down the factors affecting scale –up process. CO1 U
3. What are the equipments required for micromanipulation? CO1 U
4. How embryonic stem cells are used in our field? CO1 U
5. What are the diagnostic tests available using animal cells? CO1 U
6. How the three dimensional culture help in tissue engineering CO1 U
7. How the animal cells are used in tissue engineering? CO1 U
8. Write down the process of artificial insemination. CO1 U
9. Define Stem cells with examples. CO1 U
10. How does oxygen supply affect scale –up process? CO1 U

PART – B (5 x 16= 80 Marks)

11. (a) If you are a researcher, what are the challenges you face while scaling-up of animal cell culture. CO2 App (16)
Or
(b) If you work in animal cell lines, how will you scale-up the process for anchorage dependent cells? CO2 App (16)

12. (a) How stem cell cultures are used in the production of transgenic animals CO1 U (16)
- Or
- (b) Describe various techniques involved in manipulation and characterization genetic material for transgenesis. CO1 U (16)
13. (a) Explain cytotoxicity and what are the diagnostics test available in animal studies CO1 U (16)
- Or
- (b) Explain the methodology of engineering antibodies for therapeutic applications using hybridoma technology with examples. CO1 U (16)
14. (a) Describe the strategies used for scaling up of animal cell culture in suspension medium CO1 U (16)
- Or
- (b) Describe the design of varies bioreactors used in animal cell culture studies with neat sketches CO1 U (16)
15. (a) List down the criteria and factors affecting scale-up of animal cell culture. CO1 U (16)
- Or
- (b) Write the regulatory guidelines involved in use of animals in production of recombinant proteins. CO1 U (16)