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**GIET UNIVERSITY, GUNUPUR - 765022**  
M. Sc (Third Semester) Examinations, December - 2023  
**22ASPE304 - Animal Biotechnology**  
(Animal Science)

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks.)

**PART – A****(2 x 10 = 20 Marks)**Q.1. Answer **ALL** questions

	CO #	Blooms Level
a. Mention different media used in animal cell culture.	CO1	K2
b. Write down the characteristic features of transformed cells.	CO1	K2
c. Explain the concept of suspension culture.	CO1	K2
d. Write down the principle of cold trypsinization.	CO2	K3
e. Explain why monitoring cell death is crucial in cell culture experiments.	CO2	K3
f. Name two common methods used for characterization of cultured cells.	CO2	K2
g. Name two common techniques used in cryopreserving cells.	CO3	K3
h. Why do people go for In-Vitro fertilization?	CO3	K4
i. Define molecular pharming.	CO4	K3
j. Discuss the applications of stem cell culture in regenerative medicine.	CO4	K3

**PART – B****(10 x 5 = 50 Marks)**Answer **ANY FIVE** questions

	Marks	CO #	Blooms Level
2. a. Outline the step-by-step procedures involved in establishing a cell line in cell culture.	10	CO1	K2
3.a. Discuss the process of immortalization, focusing on the suppression of senescence genes, induction by viral genes, induction of telomerase and exposure to chemical carcinogens.	10	CO1	K3
4. a. Provide an in-depth explanation of three different methods used for cell separation in cell culture. Discuss the advantages and limitations of each method.	10	CO2	K3
5.a. Describe in detail at least three methods commonly used for the measurement of cell death in cell culture.	5	CO2	K3
b. Give a note on characterization of cultured cells.	5	CO2	K4
6. a. Describe the step-by-step processes involved in In Vitro Fertilization (IVF), from oocyte retrieval to embryo transfer.	10	CO3	K4

7.a.	Outline the key design stages in tissue engineering.	5	CO3	K3
b.	Give a note on sperm-mediated gene transfer: principles and applications.	5	CO4	K3
8. a.	Describe the process of stem cell culture, including the types of stem cells commonly used. Discuss the applications of stem cell culture in regenerative medicine.	10	CO4	K4