GALGOTIAS UNIVERSITY

ADMISSION NUMBER												

School of Biological and Life sciences

Bachelor of Science Honours in Biomedical Science
Mid Term Examination - Nov 2023

Duration : 90 Minutes
Max Marks : 50

Sem III - C2UC302B - Biotechnology

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Can you provide an example of a genetic disorder that has been successfully treated or alleviated using gene therapy, and describe the mechanism by which the therapy works?	K2	(2)
2)	Define the term "phage library" and explain its role in phage display technology.	K1	(3)
3)	Explain the concept of transgenic animals in animal biotechnology and provide an example of a transgenic animal used in research or agriculture.	K2	(4)
4)	What is the purpose of isolating and purifying nucleic acids in molecular biology, and how do the techniques differ for genomic DNA, plasmid DNA, and RNA extraction?	K2	(6)
5)	Evaluate the significance of organ culture in biomedical research, particularly in the context of studying organ-specific diseases and drug testing. How does it mimic the in vivo environment compared to traditional cell cultures?	K3	(6)
6)	Compare and contrast the applications of organ culture and monolayer cell cultures in the development of new drugs and medical treatments. What are the specific contexts where one approach is more advantageous than the other?	K3	(9)
7)	Compare and contrast the techniques used in animal biotechnology for improving livestock health and those used for enhancing the conservation of endangered species. What are the similarities and differences in these approaches?	K4	(8)
8)	Analyze the potential benefits and drawbacks of somatic hybridization in crop improvement and plant breeding, and provide case studies illustrating its successful applications.	K4	(12)
	OR		
	Evaluate the ethical and regulatory considerations associated with somatic hybridization when used in conjunction with genetic modification. How do these considerations differ from those for traditional plant breeding?	K4	(12)