GALGOTIAS UNIVERSITY

ADMISSION NUMBER												

School of Biomedical Science

Bachelor of Science in Medical Biotechnology
Semester End Examination - Jun 2024

Duration : 180 Minutes
Max Marks : 100

Sem IV - Q1UG401T - Biosensors and Nanobiotechnology

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)	Define sensitivity and selectivity?	K1	(2)
2)	Explain Green Manufacturing?	K2	(4)
3)	Explain transducer in detail with examples?	K2	(6)
4)	Illustrate how array-based DNA "biochip" sensors with fluorescence detection enhance the detection of genetic variations and mutations.	K3	(9)
5)	Illustrate utilization to enhance the shelf life and safety of food products through intelligent packaging systems?	K3	(9)
6)	Examine the challenges and opportunities in designing nanomedicines that can effectively penetrate biological barriers and reach target tissues for therapeutic intervention?	K5	(10)
7)	Analyze the challenges associated with scaling up nanoparticle production for mass use in healthcare, including issues related to cost, reproducibility, and quality control.	K4	(12)
8)	Examine the role of transducing elements in biosensors, evaluating different types such as electrochemical, optical, and piezoelectric elements in signal conversion and amplification?	K5	(15)
9)	Examine the role of characterization techniques in analyzing the size, shape, and surface properties of nanoparticles produced through biological methods.	K5	(15)
10)	Discuss the challenges associated with regulatory approval and commercialization of biosensor technologies, considering factors like safety, accuracy, and cost-effectiveness.	K6	(18)