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School of Biomedical Science

**Bachelor of Science in Medical Biotechnology
Summer Term Examination – July - August 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 Nanoparticles Toxicity? K1 (2)
- 2) Explain DNA in context of bioanalyte? K2 (4)
- 3) Explain principle of enzyme based biosensor? K2 (6)
- 4) How can nanomedicine illustrate its role in personalized medicine, providing examples of how nanoparticle-based therapies are tailored to individual patients based on their genetic makeup and disease profile? K3 (9)
- 5) Illustrate how can microbial nanoparticles be utilized in drug delivery, imaging, and biosensing applications? K3 (9)
- 6) Examine the role of bioreceptors for biosensor development with examples? K5 (10)
- 7) Analyze role of biosensor in food applications in detail? K4 (12)
- 8) Examine the ethical considerations surrounding the use of nanotechnology in food production and environmental remediation. K5 (15)
- 9) Examine the potential of nanobiotechnology in revolutionizing drug discovery and development processes? K5 (15)
- 10) Discuss the role of government policies and regulations in shaping the development and responsible use of nanobiotechnology, ensuring its safe and ethical implementation. K6 (18)