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**School of Biological and Life sciences****Master of Science in Biochemistry  
Semester End Examination - Nov 2023****Duration : 180 Minutes  
Max Marks : 100****Sem III - MSBC6004 - Protein Lipid and Nucleotide Metabolism**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) Discuss the mechanism of action of protein kinases in hormone signaling. How do protein kinases regulate cellular responses to hormone stimulation? K1 (2)
- 2) Highlight the role of enzyme involve in degradation of nucleotide? K2 (4)
- 3) Describe the biosynthesis pathways and regulation of essential and non-essential amino acids. K2 (6)
- 4) Describe the role of cyclic guanosine monophosphate (cGMP) as a secondary messenger in hormone signaling. K3 (9)
- 5) Discuss the mechanism of action of protein kinases in hormone signaling. How do protein kinases regulate cellular responses to hormone stimulation? K3 (9)
- 6) Describe the functions of the hypothalamus and pituitary glands in the endocrine system, and explain how they regulate the release of hormones. K5 (10)
- 7) Explain the de novo biosynthesis pathway of purines, highlighting the key enzymes involved and the regulation of this pathway. How is the synthesis of purine nucleotides controlled in the cell? K4 (12)
- 8) Discuss the consequences of pyrimidine metabolism disorders? K5 (15)
- 9) Explain is pyrimidine with example and structure? K5 (15)
- 10) Highlight the role of enzyme involve in synthesis of nucleotide? K6 (18)