BARKATULLAH UNIVERSITY (OPEN BOOK) EXAMINATION Dec-2020
M.Sc. 2ND SEM. (ATKT)
BIOTECHNOLOGY

Note: All questions are compulsory from every section
Max Marks: 85 for each Section

Section A PAPER I (201) MOLECULAR GENETICS

1. Write in detail about Mendelian law of inheritance.
2. Explain in detail the concept of horizontal gene transfer and its applications.
3. Define mutation and describe in detail molecular mechanisms of mutation.
4. What are oncogenes explain their importance detail.
5. Describe lytic and lysogenic cycles in detail.

Section B PAPER II (202) BASIC ENZYMOLOGY AND ENZYME TECHNOLOGY

1. Describe isolation and purification of various industrial enzymes.
2. Derive Michaelis and Menten equation and give its applications in biotechnology.
3. Explain different types of enzyme inhibitors and activators in detail.
4. Describe enzyme regulation in detail giving various examples.
5. Describe various methods for immobilization of enzymes, discus their uses in industry?

Section C PAPER II (203) MOLECULAR BIOLOGY

1. Explain in detail the role of DNA as genetic material giving examples .
2. Describe in detail the process of DNA replication in Eukaryotes.
3. Explain with diagrams the mechanism of transcription in prokaryotes.
4. Write an essay on process of protein synthesis in the cell.
5. Explain the operon concept and applications in detail

Section D PAPER IV (204) IMMUNOLOGY AND ANIMAL CELL CULTURE

1. Describe the structure and functions of primary and secondary lymphoid organs.
2. Explain theories of recognition of antigens by T and B cells and their role in disease
3. What is Autoimmunity? Give its mechanism and therapeutic approaches.
4. Describe the various processes of bulk culturing of animal cells in detail.
5. What are the various cell immobilization techniques, discuss in detail their uses.