RBC-003

Ph.D. IN BIOCHEMISTRY (PHDBC)

Term-End Examination

June, 2022

RBC-003 : BIOCHEMICAL AND MOLECULAR BIOLOGICAL TECHNIQUES

Time : 3 hours *Maximum Marks : 100*

Note : *Attempt **five** questions. Question **1** is **compulsory**. All questions carry equal marks.*

1. (a) Explain briefly any ***six*** of the following : *6×2=12*

(i) pH

(ii) Denaturation of DNA

(iii) Partition Coefficient

(iv) Confluent Cells

(v) ORF

(vi) Experimental Error

(vii) Bacteriophage

(b) Differentiate between the following : *2×4=8*

(i) RIA and ELISA

(ii) Hyperchromic and Hypochromic effect

2. (a) Explain the steps involved in isolation of DNA from animal tissue. *10*

(b) What are Primers ? Explain any four criteria used for selection of the primers. *2+8*

3. Write the principle and working of SDS-PAGE. *20*

4. Write the principles and applications of any ***two*** of the following : *2×10=20*

(a) Microarray

(b) FACS

(c) Agglutination

5. Write short notes on any ***four*** of the following : *4×5=20*

(a) Affinity Chromatography

(b) DNA Footprinting

(c) Real Time PCR

(d) Paper Chromatography

(e) Cell Culture Sterilization

6. (a) Describe Sanger's method of DNA sequencing. *10*

(b) Explain the growth curve of microorganism. How is it measured ? *10*

7. Explain the principle of separation by ion exchange chromatography and molecular sieve chromatography. *20*