RBC-003

Ph.D. IN BIOCHEMISTRY (PHDBC)

Term-End Examination

December, 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) Briefly describe any ***six*** of the following terms : *6×2=12*

(i) Buffer

(ii) Plasmid

(iii) Zone of equivalence

(iv) Transfection

(v) Degeneracy of genetic code

(vi) Melting temperature of DNA

(vii) Gene therapy

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

(i) Northern blotting and Southern blotting

(ii) Genomic library and cDNA library

2. (a) Explain different stages of PCR, with a suitable diagram. *10*

(b) Give the ten commandments of good laboratory practices. *10*

3. What is the full form of FACS ? Describe its principle, procedure and applications. *20*

4. Write the principle and applications of the following techniques : *2×10=20*

(a) Agglutination reactions

(b) Microarray

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

(a) Yeast Artificial Chromosome Vectors

(b) Thin Layer Chromatography

(c) Subcellular Fractionation

(d) Gel Retardation Assay

(e) Immunodiffusion

6. (a) Describe different steps of recombinant DNA technology. *10*

(b) Explain Sanger Dideoxy method of DNA sequencing. *10*

7. Explain the principle, instrumentation and applications of GLC. *20*