BHARATHIAR UNIVERSITY, COIMBATORE.
M. Sc., BIOCHEMISTRY DEGREE COURSE WITH COMPULSORY DIPLOMA IN CELL CULTURE AND MOLECULAR TECHNIQUES
(AFFILIATED COLLEGES)
(Changes with effective from the academic Year 2008-2009)

SCHEME OF EXAMINATIONS – CBCS PATTERN

SEM	**Subject and Paper**	**Inst. Hrs/ week**	Examinations				**Credit**
			Dur.Hrs	CIA	Marks	Total Marks	
I	Paper-I Biopolymers	5	3	25	75	100	5
	Paper-II Analytical Biochemistry and Bioinformatics	4	3	25	75	100	5
	Paper-III Enzymes and Enzyme Technology	4	3	25	75	100	5
	Paper-IV Cellular Biochemistry	4	3	25	75	100	4
	Paper-V Plant Biochemistry and Biotechnology	4	3	25	75	100	4
	Practical-I Biochemistry Practical-I	3	-	-	-	-	-
	Practical-II Biochemistry Practical-II	3	-	-	-	-	-
	Diploma Paper III – Plant Tissue Culture	3	3	25	75	100	3
II	Paper-VI Microbial Biochemistry	5	3	25	75	100	5
	Paper-VII Immunology	5	3	25	75	100	5
	Paper-VIII Advanced Clinical Biochemistry	5	3	25	75	100	5
	Paper-IX Molecular Biology	4	3	25	75	100	4
	Practical-I Biochemistry Practical-I	4	6	40	60	100	4
	Practical-II Biochemistry Practical-II	4	6	40	60	100	4
	Diploma Paper III – Animal Tissue Culture	3	3	25	75	100	3
III	Paper-X Biostatistics	5	3	25	75	100	5
	Paper-XI Metabolism and Metabolic Regulation	5	3	25	75	100	5
	Paper-XII Genetic Engineering	5	3	25	75	100	4
	Paper-XIII Endocrinology	5	3	25	75	100	4
	Paper-XIV Pharmaceutical Chemistry and Neurochemistry	5	3	25	75	100	4
	Diploma Course – Methods in Molecular Biology	5	3	25	75	100	3
IV	Project Work	-	-	-	-	200*	6
	Diploma Paper IV – Practical I & II	3	6	40	60	100	3
	Total					2200	90

* Project report - 160 marks; Viva-voce – 40 marks.

Note :

The Syllabus for the above papers (except Diploma paper IV - Practical I & II) be the same as prescribed for the academic year 2007- 08.

SEMESTER – IV DIPLOMA COURSE - PRACTICAL-I

Number of Credit Hours: 5 (Five)

PLANT TISSUE CULTURE

1) PTC laboratory organization
2) Sterilization procedures
3) Preparation of PTC medium
4) Invitro germination of seeds and estimation of carbohydrate, proteins
5) Callus induction and estimation of phenol
6) Micro propagation
7) Artificial seed production

ANIMAL TISSUE CULTURE

1) Preparation of ATC medium and membrane filteration
2) Preparation of primary culture from chik embryo
3) Estimation of enzymes from liver cells any one of the following
   a) Phosphatases b) LDH c) Transaminase
4) Isolation of DNA from animal cell

References

1) Molecular Cloning : a laboratory Manual, J. Sambrook, Fritsch and Maniatis, Cold Spring Harbor Laboratory Press, New York, 2000.
2) Applied Molecular Genetics, Roger, L.Miesfield, John Wiley and Sons Inc Publications, 1999.
3) Recombinant DNA Principles and Methodologies, James .J. greene, Vengalla B.Rao, Marcel Dekker Publications, 1998.
4) DNA Cloning, a pratical approach, D.M. Glover and B.D. Hames, IPL press, Oxford, 1995
5) Molecular and Cellular methods in Biology and Medicine, P.B. Kaufman, W.Wu, D.Kim and L.J.Cseke, CEC press, Florida, 1995.

SEMESTER – IV DIPLOMA COURSE - PRACTICAL-II

METHODS IN MOLECULAR BIOLOGY

1) Isolation of genomic DNA and RNA
2) Isolation of plasmid DNA and estimations by DNP mentods
3) Southern plotting
4) Northern plotting
5) Polymerase chain reaction
6) Isolation and purification mitochondrial DNA and assay by Marker enzymes