PhD degree in (Medical Biochemistry and Molecular Biology)

Blueprint of (Molecular biology & informational macromolecules - Advanced level) course (PhD)

Course Code: (BIC 604 MBMA, BIC 609 MBMA)

The total marks of this course are 200, divided as:

- Workplace-based assessment (40 marks)
- Written exam (160 marks), distributed as follows:

Course content	Teaching hours	Relative weight to the total marks	Total Marks	MCQ Marks	No of exam Q (MCQ)	Short essay questions Marks	No of exam Q (short essay questions)
Modern and advanced knowledge in DNA organization, DNA replication, DNA mutation, repair, transcription, translation and regulation of gene expression at different levels	11	14.67%	24	17		7	
Molecular aspects of Protein synthesis	16	21.3%	34	24		10	
Recombinant DNA technologies and molecular aspects of different diseases. • Recombinant DNA technology= genetic engenering(vectors, mechanism, practical application) • DNA amplification techniques -DNA cloning	12	16%	26	18		8	

Course content	Teaching hours	Relative weight to the total marks	Total Marks	MCQ Marks	No of exam Q (MCQ)	Short essay questions Marks	No of exam Q (short essay questions)
-Polymerase chain reaction • Techniques in molecular biology -DNA sequencing -Blotting techniques -DNA microarray (DNA chips)							
Role of molecular biology in diagnosis and treatment genetic diseases.	10	13.3%	21	15		6	
Role of CRISPR/Cas9 in genome editing	2	2.67%	4	3		1	
Methods of nucleic acid sequencing	4	5.33%	9	6		3	
RNA and protein profiling and protein DNA interaction mapping.	6	8%	13	9		4	
DNA fingerprinting technique and its role in forensic medicine	3	4%	6	4		2	
Cell cycle phases and their strict regulatory control.	3	4%	7	5		2	
Genetics of apoptosis	2	2.67%	4	3		1	
Genomic instability	2	2.67%	4	3		1	
Molecular aspects of cancer • Molecular aspects of carcinogenesis • Oncogenes & their role in cancer development	4	5.33%	8	5		3	

Course content	Teaching hours	Relative weight to the total marks	Total Marks	MCQ Marks	No of exam Q (MCQ)	Short essay questions Marks	No of exam Q (short essay questions)
• Tumor markers & their use in diagnosis and follow up of cancer							
Total	75	100%	160	112		48	

Head of Biochemistry & Molecular Biology Department
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