1 Hour **Total Marks: 25**

Note: -
1. Attempt all questions.
2. Draw neat labeled diagrams wherever necessary.
3. Use of log tables and non-programmable calculators is allowed.

Q.1	**Discuss the following: (Any One)**	**08**
1	Molecular amplification techniques- Any two types.	
2	Microarrays- Construction, types and applications.	
Q.2	**Give an account of the following: (Any One)**	**07**
1	Direct detection and identification of tuberculosis.	
2	Mass spectrometry –Instrumentation and applications. Add a note on Principle of MALDI-TOF.	
Q.3	**Do as directed:-**	**10**
1	Fill in the blank: Molecular identification methods based on the extraction of total fungal DNA offer a distinctive _____ that can be used to determine and identify various fungal isolates up to the species level.	
2	State True or False: Absolute quantification determines expression levels in absolute numbers of copies.	
3	Fill in the blank: To identify exon-level copy number variation _____ amplification method is used.	
4	State True or False: The polymerase chain reaction consists of four steps: denaturation, annealing, hybridization, and extension.	
5	Fill in the blank: Historically due to its high conservation, _____ sequencing is used as a marker for identification of pathogens.	
6	Give the reagent used in Edman degradation of proteins.	
7	Fill in the blank: _____ technique in study of gene expression uses mRNA from a particular sample to create complementary DNA (cDNA) fragments which are then amplified and sequenced using high-throughput sequencing technology.	
8	Give the definition of protein microarray.	
9	Give any one example of commercial NGS platform.	
10	List the two dimensions in 2D PAGE.	

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