

GOVERNMENT COLLEGE AUTONOMOUS, RAJAMAHENDRAVARAM  
 Department of Microbiology  
**Model question paper** for II B.Sc. Microbiology Honours  
 IV Semester, Major C 11 (rDNA Technology, Bioinformatics and Biostatistics)  
 Time : 30Hrs  
 Max Marks : 50

SECTION – A

Answer all the following questions, Draw labelled diagrams wherever necessary  
 (5x8=40 Marks)

Q.No.	Questions	Marks	BL	CO	PO
1.	Explain different Gene transfer methods	8	3	1	
(OR)					
	Discuss about BAC and YAC and explain their role in Genetic Engineering	8	2	1	
2.	Explain Hybridoma technique and steps involved in it	8	1&2	2	
(OR)					
	Explain about various applications of Genetic engineering	8	4	2	
3.	What are Intellectual Property Rights (IPR) and explain it types	8	2	3	
(OR)					
	Explain about blotting techniques and state their applications	8	2	3	
4.	Explain the differences between BLASTA and FASTA. Mention their applications in Bioinformatics	8	1&3	4	
(OR)					
	Explain about Sequence alignment in Bioinformatics.	8	2	4	
5.	Define mean, median and mode with suitable examples	8	1&3	5	
(OR)					
	Explain about the uses of Biostatistics software.	8	6	5	

Section -B  
Answer all the following Objective  
(10x1=10 marks)

**Fill in the blanks**

1. \_\_\_\_\_are initially Isolated from bacteria that cut DNA at specific sequences.
2. The desired DNA fragment is amplified using \_\_\_\_\_technique.
3. A \_\_\_\_\_ is a form of right granted by the government to an inventor for a period of time, which provides the owner to exclude others from making, using, selling, etc. of his own product.
4. \_\_\_\_\_is a database of protein sequences that includes annotations and links to other databases.
5. \_\_\_\_\_is used to analyze data and perform statistical analysis of biological and medical data.

**True or False (Tick(✓) the correct one)**

6. DNA polymerases are enzymes that joins the two DNA molecule covalently together. **(True/False)**
7. Hybridoma technology produces highly pure and specific antibodies like monoclonal antibodies. **(True/False)**
8. Southern blotting technique is used to detect both DNA and RNA in the given sample. **(True/False)**
9. PubMed is a free database of biomedical and life sciences literature that supports bioinformatics research. **(True/False)**
10. In Statistics, the sample mean considers the entire population data from the given data. **(True /False)**