

M.Sc Semester-2 Examination

408

Zoology

April-2024

Time : 2-30 Hours]

[Max. Marks : 70

Q-I	1	Describe the utilization of Y2H assay to determine interaction of two proteins.	(14)
	2	Explain BP and LR reaction.	
	OR		
	1	Write a note on "Cas enzymes".	
	2	Write a note on "Screening of bacterial colonies using antibodies".	
Q-II	1	What are vectors? Write a note on any two .	(14)
	2	Write a note on nucleases and polymerases.	
	OR		
	1	What are the applications of recombinant DNA technology? Discuss.	
	2	Write a detailed answer on construction of cDNA library.	
Q-III	1	Describe in detail: The real-time PCR probe-based detection system.	(14)
	2	Explain the process of DNA foot-printing and draw a labelled diagram for it.	
	OR		
	1	What is the utility of DNA fingerprinting? Explain using different examples.	
	2	Draw a diagram and write about the steps involved in rapidly amplifying specific segments of DNA in millions of copies in in-vitro conditions.	
Q-IV	1	Explain in detail the steps involved in the RNA blotting process.	(14)
	2	Provide details about the Maxam-Gilbert DNA sequencing technique.	
	OR		
	1	Write a short note on the procedure of the Western blotting technique.	
	2	Explain the steps involved in sequencing DNA using the chain termination technique.	
Q-V	Answer any SEVEN out of TWELVE.		(14)
	1	Give uses of Cas13a.	02
	2	How oligonucleotide probe is generated for the screening of colonies?	02
	3	What are competent cells? Give one example.	02
	4	What is the importance of ligases?	02
	5	What are GMOs?	02
	6	Differentiate between cDNA and genomic library.	02
	7	Provide the name of the cleavage agents that are used in the DNA foot-printing method.	02
	8	Make a labelled diagram of the RNA extraction process using magnetic beads.	02
	9	List out the various components used in the preparation of master mix useful for PCR.	02
	10	During the Southern blotting procedure, which treatment is helpful to covalently bond blotted DNA with the nitrocellulose and nylon membrane?	02
	11	Give two differences between Western blotting and the dot blot method.	02
	12	What is the full form of RFLP? Define RFLP.	02

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