LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



M.Sc. DEGREE EXAMINATION - BIOTECHNOLOGY

THIRD SEMESTER - NOVEMBER 2017

BT 3956 - FUNCTIONAL GENOMICS

	09-11-2017 09:00-12:00	Dept. No.		Max.: 100 Marks
I Ch	4		PART – A nswer ALL the Question	
I. Cho	ose the correct answer	•		$(5 \times 1 = 5 \text{ Marks})$
1.	Identification of genes	and functions belo	ngs to which type of anno	tation
	a) 1		b) 2	
	c) 3		d) 4	
2.	Geftinib inhibits which	of the following		
	a) Tyrosine kinase		b) Methyl transferase	
	c) Serotonin		d) Adregenic receptor	
3. Which of the following is the most sensitive gene expression quantification assay?				
	a) Northern blot		b) RPA	
	c) Real time PCR		d) <i>In situ</i> hybridization	
4.	_	ition modification i	required for cell cycle pro	gression.
	a) Methylation		b) Phosphorylation	
_	c) Acetylation	· · · NOT	d) Nitrosylation	
5.		owing is NOT a rev	erse genetics approach?	
	a) RNAi		b) Gene knockout	!-
	c) Chemical mutagenes	SIS	d) Insertional mutagen	esis
II Sta	te whether the following	ng are true or false	0	(5x1=5 Marks)
II. State whether the following are true or false.6. Telomeric regions have repetitive sequences.				
		_		(SXI=S Walks)
6.	Telomeric regions have	e repetitive sequenc	ces.	(SAI – S IVIAI RS)
6. 7.	Telomeric regions have Oligonucleotide arrays	e repetitive sequence are more specific t	ces. than cDNA arrays.	
6. 7. 8.	Telomeric regions have Oligonucleotide arrays Fluorescent In situ hyb	e repetitive sequence are more specific to oridization is not a	ces. than cDNA arrays. mRNA expression quantif	
6. 7. 8. 9.	Telomeric regions have Oligonucleotide arrays Fluorescent In situ hyb	e repetitive sequence are more specific to oridization is not a recipitate the target p	ces. than cDNA arrays.	
6. 7. 8. 9.	Telomeric regions have Oligonucleotide arrays <i>Fluorescent In situ</i> hyb The protein used to pre snRNAs are small nucl	e repetitive sequence are more specific to oridization is not a recipitate the target pleolar RNAs.	ces. than cDNA arrays. mRNA expression quantif	ication technique.
6. 7. 8. 9. 10	Telomeric regions have Oligonucleotide arrays <i>Fluorescent In situ</i> hyb The protein used to pre snRNAs are small nucleomplete the following	e repetitive sequence are more specific to oridization is not a recipitate the target pleolar RNAs.	ces. than cDNA arrays. mRNA expression quantif	
6. 7. 8. 9. 10	Telomeric regions have Oligonucleotide arrays <i>Fluorescent In situ</i> hyb The protein used to preson snRNAs are small nucle. Complete the following. The number of genes in	e repetitive sequence are more specific to oridization is not a recipitate the target pleolar RNAs.	ces. than cDNA arrays. mRNA expression quantif protein is called the bait	ication technique. (5 x 1= 5 Marks)
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PART B

Answer the following each within 500 words. Draw diagrams wherever necessary

 $(5 \times 8 = 40 \text{ marks})$

21. (a) Mention the four levels of annotation in E.coli

OR

- b) Discuss the complexity of eukaryotic genome.
- 22. a) Comment on the gene expression patterns.

OR

- (b) Explain in detail the principle behind real time PCR technique.
- 23. (a)Devise a method to quantify RNA.

OR

- (b)Write about transcriptional profiling.
- 24. (a)Mention the any FOUR online sources to study protein-protein interactions and their significance.

OR

- (b) Write an account on Phosphorylation and glycosylation.
- 25. (a) Explain gene knockout of globin mouse.

OR

(b)Outline the methodology of metabolomic analysis

PART - C

Answer any TWO of the following, each within 1500 words. Draw diagrams wherever necessary.

 $(2 \times 20 = 40 \text{ Marks})$

- 26. Elaborate on any two sequencing methods.
- 27. Write in detail about Microarray technology and add a note on its applications.
- 28. Describe yeast two hybrid assay and co-immunoprecipitation of protein-protein complexes.
- 29. Explain in detail about siRNA and miRNA mediated RNA interference.
