## Bachelor of Science (B.Sc.) Sixth Semester B.Sc. 4502 - Biochemistry Paper-II (Molecular Biology & rDNA Technology)

## P. Pages: 2

Time : Three Hours

## \* 1 0 4 8 \*

GUG/W/18/1335

Max. Marks : 50

	Note	<ul><li>s: 1. All questions are compulsory &amp; carry equal marks.</li><li>2. Draw diagrams wherever necessary.</li></ul>	
1.		Describe in detail major features of genetic code.	10
		OR	
		Describe the process of initiation of translation in prokaryotes.	10
2.		<ul> <li>Give the definition &amp; characteristics of an ideal vector. Describe in detail following types of plasmid vectors.</li> <li>a) pBR<sub>322</sub></li> <li>b) pUC<sub>18</sub></li> </ul>	10
		OR OR	
		<ul><li>Describe the applications of rDNA technology in the following field.</li><li>a) Medicine.</li><li>b) Gene therapy</li></ul>	10
3.	a)	Describe cell free protein synthesizing system of Nirenberg & Mathaei.	2 <sup>1</sup> /2
	b)	Describe briefly the structure of ribosome.	2 <sup>1</sup> /2
	c)	Write short note on Ti-plasmid.	2 <sup>1</sup> /2
	d)	Describe blue-white screening technique.	2 <sup>1</sup> /2
		OR	
	e)	Draw a well labelled diagram of clover leaf model of tRNA.	2 <sup>1</sup> /2
	f)	Describe the process of attachment of amino acid to tRNA during protection translation.	2 <sup>1</sup> /2
	g)	Describe the role of Cosmids as a vector.	2 <sup>1</sup> /2
	h)	Give the applications of PCR.	2 <sup>1</sup> /2
4.	a)	Write a note on Shine-Dalgarno sequence.	2 <sup>1</sup> /2
	b)	Describe different elongation factors.	<b>2<sup>1</sup>/</b> <sub>2</sub>
	c)	Describe different types of restrictor endonucleases.	<b>2<sup>1</sup>/</b> 2

d	) Gi	ve a general procedure Ca-phosphate precipitation.	21/2	
		OR		
e)	W1	ite a note on Wobble hypothesis.	21/2	
f)	De	scribe the procedure of formylation of methionine in Prokaryotic translation.	21/2	
g	) W1	Write a note on $T_4$ – DNA Ligase.		
h	) Ex	plain the technique of primer designing in PCR.	21/2	
	An	swer any ten of the following.		
	a)	Name the components of decoding system.	1	
	b)	Name the first codon to be deciphered.	1	
	c)	Error correction in aminoacylation was done by double sieve mechanism. (True or False)	1	
	d)	What is meant by a charged tRNA?	1	
	e)	The initiator t-RNA is loaded at which site of ribosome?	1	
	f)	What are $RF_1 \& RF_2$ .	1	
	g)	What is meant by transformation?	1	
	h)	What is a palindrome sequence of restriction enzymes?	1	
	i)	What are adaptors?	1	
	j)	What is the difference between Southern & Western blotting?	1	
	k)	Give the full form of Bt. in Bt. Cotton.	1	
	1)	What does "C" stands for in cDNA library?	1	

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