NO. OF PRINTED PAGES: 02

Total Marks: 70

SARDAR PATEL UNIVERSITY **B.Sc.** V Semester Examination

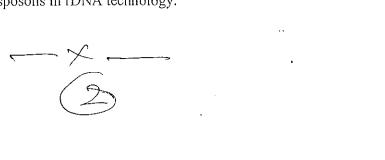
5/4/2019 friday 10:00 am to 1:00 pm

Biotechnology: US05CBIT01

Molecular Biology

Mul	ltiple Choice Questions	i.		
	are hotspots for sp	ontaneous mutations in vertebrate DNA.		
a) Methylated cytosine	c) Methylated guanine d) Methylated thymine		
b) Methylated adenine	d) Methylated thymine		
Xero	derma pigmentosum in hum	an is associated with a mutation in .		
а) Base excision repair	c) Nucleotide excision repair		
b) Photo reactivation	d) Mismatch repair		
5-bro	omouracil is an analog of	c) Nucleotide excision repair d) Mismatch repair		
a)	Thymine	c) Cytosine		
b)	Guanine	d) Adenine.		
Euka	ryotic RNA polymerase-I is	specialized to transcribe		
) tRNA	c) rRNA		
b) mRNA	d) Mitochondrial RNA.		
Wha	t is added to the 3'end of ma	ny eukaryotic tRNAs after transcription?		
a) Tri-nucleotides CCA	c) Introns		
b) Poly A tail	d) Cap of modified G nucleotide		
In eu	karyotic translation is initiat	ted by binding of ribosome to the		
a) Poly A tail	c) 5' cap		
b) TATA box	d) Pribnows box		
Whic	ch of the following statemen	ts regarding splicing of eukaryotic mRNA transcripts is		
corre	ct? .	· · · · · · · · · · · · · · · · · · ·		
a) Several reactions in the sp	olicing process involved hydrolysis of ATP.		
b) Exons are splice out and i	introns are retained in mature mRNA.		
c)) Small nuclear RNAs are i	Small nuclear RNAs are retained in the mature mRNAs.		
d) Splicing take place in cyte	osol.		
Secre	etory proteins are synthesize	d by		
' a) Free ribosomes	d by c) Ribosomes on endoplasmic reticulum		
b)) Ribosome on nuclear mer	nbrane d) All of the above.		
Whic	ch of the following functions	s is not performed by transposase?		
a) Formation of the RNA in	termediate. "		
b) Restriction of the IS elem	ents.		
С) Integration of the transpo	son.		
d) Restriction of the host ger	nome.		
LINI	and SINE are examples of			
a) LTR transposons Î	c) Non-LTR transposons		
b) Composite transposons	d) Ac-Ds elements.		

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Q.2	Answer the following questions in short. (Attempt any 10)	[20]	
i)	Write the role of cdk in eukaryotic replication.		
ii)	Define: transition mutation and transversion mutation.		
iii)	Write the role of photolyase and methyl transferase enzymes in direct repair system.		
iv)	Give a brief note on core promoter.		
v)	Give various functions of RNA polymerase.		
· vi)	Define RNA splicing.		
vii)	Write about methylation of amino acid with its significance.		
viii)	What do you meant by SRP? Write its functions.		
ix)	Define translocation.		
x)	Define transposons and transposition.		
xi)	Write an importance of target site in transposition.		
xii)	"Transposons exist as both autonomous and non autonomous elements" justify the above statement.		
Q.3 a) b)	Write a detail note on initiation of eukaryotic replication? How it is controlled? What is SOS response? Explain in detail.	[06] [04]	
,	OR		
		[06]	
Q.3 a)	Discuss in detail- DNA damage caused due to hydrolysis, deamination and radiations. Give an account on Nucleotide excision repair system.		
b)			
Q.4	Describe the process of transcription in eukaryotes.		
	OR		
Q.4 a)	Write about the mechanism of splicing by spliceosome machinery.		
b)	Explain 5' and 3' modifications in detail.	[04]	
Q.5	Explain diagrammatically the process of elongation and termination of eukaryotic	[10]	
	translation		
	OR		
Q.5 a)	Describe any four methods for post translation modification of nascent proteins.	[06]	
b)	Give an account on protein targeting in endoplasmic reticulum and nucleus.	[04]	
Q.6 a)	Explain in detail- transposable elements in maize.	[05]	
Q.0 a)	What do you meant by LINE and SINE? - discuss in detail.	[05]	
	OR		
Q.6 a)	Write a short note on "transposition by a reverse splicing mechanism"	[06]	
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