oc

70

[8]

of pages: 3

(42) SARDAR PATEL UNIVERSITY

M.Sc. (BIOINFORMATICS)

SEMESTER - I External Examination

PS01CMBI02: Molecular Biology and rDNA technology Wednesday, 5th December 2012

Ti	me: 10:30 am to 01:30 pm	Max Marks:
Q1.	Choose the most appropriate option for ea	ach question.
a.	The core histones share a common structur	al fold and the histone fold is composed of:
	A) 4 α helix separated by loops	B) 2α helix separated by loops
-14	C) 3 α helix separated by sheet	D) 3 α helix separated by loops
	E) None of Above	
b.	The large subunit of eukaryotic ribosome is	s composed of.
	A) 16S rRNA	B) Decoding center
	C) 18S rRNA	D) Peptidyl transferase center
	E) None of Above	
c.	Metaphase Chromosome is also called as _	
	A) 1000nm fiber	B) 300nm fiber
	C) 1400nm fiber	D) 700nm fiber
	E) None of Above	
d.	The DNA most tightly associated with	the nucleosome is wound approximately
	times around the outside of the h	istone octamer like thread around a spool.
	A) 1.55	B) 1.65
	C) 1.45	D) 1.50
	E) None of Above	
e.	Which phosphoryl group of the incoming	nucleoside triphosphate is attacked by the
	hydroxyl group of the 3^\prime end of the primer	in DNA synthesis?
	Α) α	В) β
	C) \(\lambda\)	D) γ
	E) None of Above	

In DNA replication primase is activated only when it associates with.

f.

	C) RNAse H	D) DNA helicase		
	E) None of Above			
g.	Extension of which end of the telomere	by telomerase solves the end replication		
	problem?			
	A) 5'	B) 2'		
	C) 3'	D) 5' & 3'		
	E) None of Above			
h.	Gre factors serves as			
	A) Hydrolytic editing stimulator	B) Hydrolytic editing enhancer		
	C) Elongation stimulating factor	D) All of above		
	E) None of Above			
2.	Answer the questions (Any seven):	× × ×	[14]	
a.	Describe 30-nm chromatin fiber structure of	DNA.	# 1 3 CH 53	
o.	Explain how loading and removing of slid during replication.			
c .	The structure and formation of the 5' RNA	2		
1.	With the help of schematic diagram show regions of σ factor and different channels in			
	Show hydrogen bonding between A: T with	the help of schematic diagram.		
	Explain importance of isoaccepting tRNAs during the process of translation.			
5.	Second genetic code.			
۱.,.	Describe the structure and the functions of all DNA polymerase domains.			
	Discuss isoelectric focusing technique for pr	otein purification.		
•	Describe spliceosome machinery and role of	any two units in splicing reactions.		
3.				
	Explain atomic structure of eukaryotic Nucle	eosome.	[6]	
	Define translation coupling. List four prima	ry components responsible for translating	[6]	
	the language of mRNAs into the language		NE.030	
	structure in detail.	And the second service and the second	12	

B) DNA replicase

A) DNA ligase

Ь.	Describe two steps of aminoacyl-tRNA charging with necessary details.	[6
Q4.		
a.	Describe composition of the prokaryotic and eukaryotic ribosomes with sizes of rRNA	[6
	and the number of proteins present in it.	
b.	Discuss about structure of telomerase. Explain end replication problem and discuss	[6
	how telomerase solves it.	
	OR	
b.	Explain how transcription initiation is regulated by proteins that bind to or near	[6
	promoters.	
Q5.		
a.	Discuss combined role of RRF and EF-G in termination of translation.	[6
ь.	Describe three events in detail which must occur for translation to be successfully	[6]
	initiated.	
	OR	
ь.	With the help of diagram explain a model of initiation factor binding to the 30S	[6]
	ribosomal subunit and explain different events taking place during the initiation of	
	translation.	
Q6.		
a.	Define RNA splicing and discuss about Alternative Splicing in detail.	[6]
b.	Explain various DNA-Binding Domains of regulatory proteins.	[6]
	OR	30.85
b.	Discuss mechanism of the try operon and explain end-product inhibition.	[6]

छक्रछक्रव्यव्यव्यव