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## SARDAR PATEL UNIVERSITY

Course (B. Sc. Biotechnology Third - Semester) Examination Code No.: US03CBIT21, Paper Title: Fundamentals of Biotechnology Date: 15-06-2022, Wednesday Time: 12:00 to 02:00 PM

Note:	Figur	es to the right indic	ates marks.			Total Marks: 7	
Q.I	Multi	ple Choice Question	ıs				[10]
1)	In dou	ble stranded DNA, i	f 15% of DNA is A	de	enine, what percent is cy	tosine?	
-,		35%	b)		60%		
	c)	40%	,		85%		
2)	Guani	ne & Cytosine of DI	NA molecule are he	ld	together by	•	
	a)	Glycosidic bond	b)	}	Three hydrogen bonds Phosphodiester bond		
	ά	Two hydrogen bone	ds d)	)	Phosphodiester bond		
3)	In É f	orm of DNA, one tu	rn of double helix a	ıt €	every 34Å distance inclu	des how many	
,		otides?			•		
	a)	10	,		15		
		20	<b>d</b> )	)	34		
4)	Chlor	oplast DNA is also k	nown as				
,	a)	Plastic DNA	b)		Plasmid DNA		
	c)	Protoplast DNA	ď	)	Nuclear DNA.		
5)	Ri pla	asmid cause	_disease in plants.		•		
٠.	a)	Hairy root	b	_	Crown gall		
	c)	Blight			Wilt		
6)	In Ti	plasmid	_carries gene that o	coc	le for protein involved in	n the biosynthes	
,	auxin	& cytokinin & plan	t metabolites name	ly	opines & agropines.		
	a)	T-DNA			Ori		
	c)	Vir	d	)	Host specific region		
7)	Wob	ole hypothesis explai	ins why multiple co	do	ons can code for a single	•	
,	a)	Amino acid	b	)	Protein		
	c)	Gene	d	l)	Nucleotide		
8)		NA is rich in	<del>_'</del>		en 1		
	a)	Adenine		•	Thymine		
-		Uridine		l)	Guanine		
9)	Give	the correct order of	the stage of mitosis	i.			
	1- N	letaphase 2- Teloph	ase 3- Anaphase 4	- J	Prophase		
	a)	4,3,2,1		•	4,1,3,2		
	c)	3,4,2,1			1,2,3,4		
10)	The		is also known as th	e:	spindle checkpoint:		
	a)			•	G 0		
	c)	G1	(	(l:	M		

Q.11	Do as directed	[08]
a)	Harshey & Chase experiment used radioisotope to label DNA in their experiment.	[00]
b)	plasmids confer to bacteria the ability to produce toxic proteins known	
	as colicines.	
c)	The carries genetic information in the form of codons.	
đ)	is the process in which the cell actually divides into two.	
e)	Frederick Griffith conducted a series of experiments using <i>Staphylococcus</i> bacteria. (True/False)	
f)	Plasmid found in bacteria are molecules of RNA. (True/False)	
g)	A genetic code is degenerate. (True/False)	
h)	DNA replication occurs during S phase of cell cycle. (True/False)	
Q.III.	Answer the following questions in short. (Attempt any 10)	[20]
a)	Mention about the biological properties of DNA.	
<b>b</b> )	What is the effect of Alkali and acid on nucleic acid?	
c)	Write about A form of DNA.	
<b>d</b> )	Draw the genetic map of pBR322.	
e)	Write about Col plasmid	
f)	Write in brief about Chloroplast DNA.	
g)	What is wobble base?	
h)	Give the properties & functions of microRNA	
i)	Write about rRNA.	
j)	Differentiate between Mitosis & Meiosis.	
k)	Mention about G1 phase of cell cycle.	
1)	What is apoptosis?	
Q.V	Answer the following questions in detail. (Attempt any 4)	[32]
a)	Describe Watson & Crick model of DNA.	[]
<b>b</b> ).	Discuss in detail Harshey& Chase experiments which prove DNA as a genetic material.	
c)	Give an account on Ti and F plasmids.	
d)	Write about pUC8. Explain in detail Blue-White screening.	
e)	Write in detail about clover leaf model of tRNA.	
f)	What is genetic code? Explain in detail the properties of genetic code.	
g)	Define Mitosis. Explain in detail its phases with diagram.	
5) h)	Discuss in detail regulation of cell cycle	

