

PARUL UNIVERSITY
PARUL INSTITUTE OF APPLIED SCIENCES
MID SEMESTER INTERNAL EXAMINATION, SEPTEMBER 2019

M. Sc. Semester I

Subject: MB

Paper Name: Genetics

Date: 05 / 9 /2019

Paper Code: 11202101

Time: 90 mins

Maximum Marks: 40

Instructions:

1. All questions are compulsory and options are given in first and second question only.
2. Numbers to the right of question indicate the marks of respective question.

Q. 1	Attempt any one question of the following. (i) What is a Knockout Mice and how are they constructed. (ii) Explain the Agrobacterium mediated Gene Transfer with proper diagram.	(08)
Q. 2	Attempt any three questions of the following. (i) Short note on arabinose operon as a dual promoter. (ii) Write short note on regulation of Trp Operon. (iii) Write a short note on Bacterial sporulation. (iv) Describe the regulation of Lac operon. (v) Explain restriction endonuclease with an example.	(12)
Q. 3	Define the following. Attempt all five questions. (i) Vector (ii) Cohesive ends (iii) Blunt ends (iv) Microinjection (v) Conjugation	(05)
Q. 4	Write correct option in your answer sheet for following 15 multiple choice questions.	(15)

MCQ 1	Lac operon will turn _____ in the _____ of Lactose.			
	(A)	ON, Presence	(B)	ON, Absence
	(C)	OFF, Presence	(D)	OFF, Absence
MCQ 2	Vir __ helps in the formation of the Pilus in an Agrobacterium mediated gene transfer.			
	(A)	A	(B)	B
	(C)	D	(D)	E
MCQ 3	DNA is _____ charged.			
	(A)	Negatively	(B)	Positively
	(C)	Neutral	(D)	None of the above
MCQ 4	In an Electroporation technique _____ intensity of electric field is given for a			

	_____ period of time.		
	(A)	High, Shorter	(B) High, Longer
	(C)	Low, shorter	(D) Low, Longer
MCQ 5	Homopolymer tailing is addition of which of the following nitrogenous bases?		
	(A)	Adenine	(B) Guanine
	(C)	Cytosine	(D) None of the Above
MCQ 6	Which of the following RE creates a Blunt End.		
	(A)	E.coRI	(B) Hind III
	(C)	BamHI	(D) SmaI
MCQ 7	A positive marker in a Knockout mice is _____.		
	(A)	Neomycin	(B) Streptomycin
	(C)	Gancyclovir	(D) None of the above
MCQ 8	If the glucose level is low the cAMP level will be _____.		
	(A)	low	(B) More
	(C)	Intermediate	(D) None of the above
MCQ 9	In the presence of Tryptophan the Trp operon will turn _____.		
	(A)	ON	(B) OFF
	(C)	Both	(D) None of the above
MCQ 10	Which is the structural gene the codes for β Galactosidase enzyme in Lac operon.		
	(A)	Z	(B) Y
	(C)	A	(D) X
MCQ 11	The virions are release in _____ cycle of Bacteriophage.		
	(A)	Lytic	(B) Lysogenic
	(C)	Both	(D) None of the above
MCQ 12	DNA gets precipitated in which type of gene transfer technique.		
	(A)	Electroporation	(B) Calcium chloride
	(C)	Microinjection	(D) Liposome mediated
MCQ 13	In the tryptophan operon the repressor protein binds to the _____.		
	(A)	Promoter	(B) Operator
	(C)	Attenuator	(D) Terminator loop
MCQ 14	Select the wrong statement about plasmids?		
	(A)	It is extrachromosomal	(B) It is double stranded
	(C)	Its replication depends upon host cell	(D) It is closed and circular DNA
MCQ 15	Phagemid vectors are		
	(A)	combination of plasmid and phage λ	(B) combination of phages and cosmid
	(C)	phages carrying properties of plasmids	(D) all of the above

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