

**University of Mumbai**  
**Examination 2020 under cluster 3 (FCRIT)**

Program: BE Biotechnology

Curriculum Scheme: Revised 2016

Examination: Third Year Semester V

Course Code: BTC502 and Course Name: Genetic Engineering

Time: 1 hour

Max. Marks: 50

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Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	What should be the complementary strand of 3'....ATGGCTTGA....5'?
Option A:	3'....TACCGAACT....5'
Option B:	5'....TACCGAACT....3'
Option C:	3'....TAGGCAAGT....5'
Option D:	5'....TAGGCAAGT....3'
Q2.	The first X-ray diffraction patterns of DNA were taken in 1938 by
Option A:	William Asbury
Option B:	Rosalind Franklin
Option C:	Francis H. Crick
Option D:	Linus Pauling
Q3.	The type of topoisomerases which generally relaxes DNA by removing negative supercoiling?
Option A:	Type I
Option B:	Type II
Option C:	Type III
Option D:	Type IV
Q4.	Which of the following will form a palindromic sequence?
Option A:	ATTGCAAT
Option B:	AGTCCTGA
Option C:	GTTCCAAG
Option D:	GTTGGAAC
Q5.	Which of the following palindromes is not a restriction site?
Option A:	GAATTC
Option B:	TACGTA
Option C:	CCTAGG
Option D:	AGCT
Q6.	Inverted repeat have a number of biological functions. Which of the following is

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	a biological function of an inverted repeat?
Option A:	Diseases
Option B:	Central dogma
Option C:	Cellular metabolism
Option D:	Genetic stability
Q7.	What is the minimum number of bases required for loop stability?
Option A:	2
Option B:	3
Option C:	4
Option D:	5
Q8.	Lambda vector subverts which important enzyme of E.coli?
Option A:	DNA polymerase
Option B:	Helicase
Option C:	RNA polymerase
Option D:	Nuclease
Q9.	Below what temperature can the cI protein repress the lambda promoter?
Option A:	10 degrees
Option B:	20 degrees
Option C:	30 degrees
Option D:	40 degrees
Q10.	How can the synthesis of T7 RNA polymerase can be switched on in a culture?
Option A:	IPTG addition
Option B:	IPTG removal
Option C:	Ampicillin addition
Option D:	Ampicillin removal
Q11.	Chemical used for gene transfer method includes
Option A:	Polyethylene Glycol
Option B:	Toluene
Option C:	Agarose
Option D:	Ethidium Bromide
Q12.	Transformation carried out using a particle gun is known as biolistic transformation. It falls under which category of transformation?
Option A:	Physical
Option B:	Chemical
Option C:	Electroporation
Option D:	Natural
Q13.	Which of the following is called as natural genetic engineer?
Option A:	<i>E.Coli</i>

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Option B:	<i>Agrobacterium tumafaciens</i>
Option C:	<i>Arabidopsis thaliana</i>
Option D:	Cyanobacteria
Q14.	In which phase of growth does the recipient cell take up the Donor DNA?
Option A:	Lag phase
Option B:	Log phase
Option C:	Death Phase
Option D:	Stationary phase
Q15.	Enzyme involved in making cDNA from mRNA is _____
Option A:	Polymerase
Option B:	Ligase
Option C:	Reverse transcriptase
Option D:	Restriction endonuclease
Q16.	Enzymes that remove the phosphate group present at the 5' terminal of a DNA molecule is _____
Option A:	Alkaline phosphatase
Option B:	Polynucleotide kinase
Option C:	Terminal Deoxy nucleotidyl transferase
Option D:	Topoisomerase
Q17.	How many classes of restriction enzymes are there?
Option A:	2
Option B:	1
Option C:	3
Option D:	4
Q18.	Sticky ends are .....
Option A:	Cohesive ends
Option B:	Flush ends
Option C:	Double stranded
Option D:	Blunt
Q19.	Southern hybridization is
Option A:	Used to identify specific protein
Option B:	Used to identify specific DNA
Option C:	Used to identify specific RNA
Option D:	Used to identify both DNA & RNA
Q20.	What is the main enzyme component of Sanger sequencing?
Option A:	Helicase
Option B:	Polymerase
Option C:	Nuclease

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Option D:	Gyrase
Q21.	_____ is a technique that exploits variations in homologous DNA sequences, known as polymorphisms, in order to distinguish individuals, populations, or species or to pinpoint the locations of genes within a sequence
Option A:	RAPD
Option B:	ELISA
Option C:	PCR
Option D:	RFLP
Q22.	Aminobenzyloxymethyl is commonly used for transfer in
Option A:	Western blotting
Option B:	Southern blotting
Option C:	Northern blotting
Option D:	Dot blotting
Q23.	Which of the following is the genetically engineered insulin?
Option A:	Humulin
Option B:	Rumulin
Option C:	H-insulin
Option D:	R-insulin
Q24.	The first human protein produced through recombinant DNA technology is
Option A:	Insulin
Option B:	Erythropoitin
Option C:	Interferon
Option D:	Stomatostatin
Q25.	During recombinant insulin synthesis, the bond between insulin polypeptide and galactosidase can be removed by using
Option A:	cyanogen bromide
Option B:	chymotrypsin
Option C:	carboxy peptidase
Option D:	amylase