

Program: BE Biotechnology Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code: BTC502 and Course Name: Genetic engineering

Time: 1 hour

Max. Marks: 50

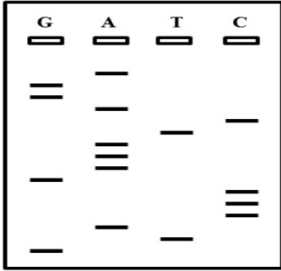
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Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	Levene investigated and found that the nucleic acid is composed of poly-nucleotides and each nucleotide is composed of one base, a sugar molecule and a phosphate. This was performed on the genome of _____
Option A:	Bacteria
Option B:	Fungi
Option C:	WBCs
Option D:	Yeast
Q2.	What type of DNA enzymes is made use of in most of the DNA manipulative techniques?
Option A:	Partially degraded
Option B:	Purified
Option C:	Degraded or denatured
Option D:	Enclosed in a parent cell
Q3.	What is the copy number of the pUC8 plasmid vector?
Option A:	5-10
Option B:	50-100
Option C:	100-200
Option D:	500-700
Q4.	Which one is an electric method of gene transfer?
Option A:	Membrane fusion
Option B:	Microinjection
Option C:	Electroporation
Option D:	Transfection
Q5.	Enzyme involved in making cDNA from mRNA is _____
Option A:	Polymerase
Option B:	Ligase
Option C:	Reverse transcriptase
Option D:	Restriction endonuclease

Q6.	Which of the following ELISAs uses two different antibodies? i) Direct ELISA ii) Indirect ELISA iii) Competitive ELISA
Option A:	(i), (ii) & (iii)
Option B:	Only (ii)
Option C:	(ii) & (iii)
Option D:	Only (iii)
Q7.	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
Q8.	Which type of supercoiling takes the form of extended right-handed coils?
Option A:	Plectonemic supercoiling
Option B:	Solenoidal supercoiling
Option C:	Negative supercoiling
Option D:	Positive supercoiling
Q9.	Which endonuclease cleaves both single and double stranded DNA molecules, in a non-specific manner?
Option A:	S1
Option B:	Bal31
Option C:	DNase I
Option D:	BamHI
Q10.	What additional feature does Pgem3Z has which makes it a suitable vector for in vitro transcription of cloned genes?
Option A:	Unique Ori
Option B:	Promoters
Option C:	Clustered cloning sites
Option D:	LacZ' gene
Q11.	Bal31 is an example of
Option A:	Exonuclease
Option B:	Endonuclease
Option C:	Polymerase
Option D:	Phosphatase
Q12.	What is the main enzyme component of Sanger sequencing?
Option A:	Helicase
Option B:	Polymerase

Option C:	Nuclease
Option D:	Gyrase
Q13.	The first licensed drug produced through genetic engineering is
Option A:	Somatotropin
Option B:	Insulin
Option C:	Somatostatin
Option D:	β -endorphin
Q14.	Isolation of genomic DNA follows the same principles as that of obtaining plasmid from E. coli. Which of the following is not included in it?
Option A:	Cell lysis
Option B:	Removal of proteins
Option C:	Removal of chromosomal DNA
Option D:	Dissolving plasmid in water
Q15.	Which of the following statement is not true in case of DNA Polymerase- Reverse transcriptase?
Option A:	Involved in the replication of bacteriophage
Option B:	Uses RNA as a template
Option C:	Used in complementary DNA cloning
Option D:	Synthesizes DNA from RNA
Q16.	Which DNA is restricted to making a genomic library?
Option A:	Genomic
Option B:	Plasmid
Option C:	Phage
Option D:	Plant
Q17.	The term 'endonuclease' refers to cutting the DNA sequence from _____
Option A:	only within the polynucleotide chain, not at the ends
Option B:	the ends of the chain
Option C:	anywhere in the chain
Option D:	exactly in the middle of the chain
Q18.	What is application of Blood clotting factor VIII
Option A:	Stimulation of blood cells production
Option B:	Treatment of viral infection
Option C:	Treatment of Haemophilia A/B
Option D:	Stimulation of RBC production
Q19.	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																
Q20.	Starting from the sequencing primer, what is the sequence of the DNA sample? 																
Option A:	AAGGATCAAACCCTGA																
Option B:	AACGATCAAACCCTGA																
Option C:	AGGACTAAAGCCCATG																
Option D:	AGGACTCCCGAAATAC																
Q21.	The gene encoding blood clotting factor VIII is _____																
Option A:	<i>F8</i>																
Option B:	<i>S8</i>																
Option C:	<i>G8</i>																
Option D:	<i>B8</i>																
Q22.	Polyadenylation of RNA species is an important criterion for the production of cDNA species. Which of the following holds true?																
Option A:	Polyadenylation should be at 3' end																
Option B:	Eukaryotic mRNAs are mostly non-polyadenylated																
Option C:	Bacterial mRNAs and organelle mRNAs are polyadenylated																
Option D:	It is carried out by the addition of T residues after synthesis																
Q23.	Which among the following are the smallest plasmid and an ideal cloning vector?																
Option A:	a) ColE1																
Option B:	b) RP4																
Option C:	c) PUC8																
Option D:	d) F																
Q24.	Adsorption onto a solid phase support followed by elution is used as an alternative for separation of which component?																
Option A:	chromosomal DNA																
Option B:	plasmid DNA																
Option C:	RNA alone																
Option D:	other impurities																
Q25.	<table border="1" data-bbox="368 1850 1431 2000"> <tr> <td>1.</td> <td>Southern blotting</td> <td>(i)</td> <td>Alwin</td> </tr> <tr> <td>2.</td> <td>Western blotting</td> <td>(ii)</td> <td>E.M Southern</td> </tr> <tr> <td>3.</td> <td>Northern blotting</td> <td>(iii)</td> <td>A. Jeffrey</td> </tr> <tr> <td>4.</td> <td>DNA fingerprinting</td> <td>(iv)</td> <td>Towbin</td> </tr> </table>	1.	Southern blotting	(i)	Alwin	2.	Western blotting	(ii)	E.M Southern	3.	Northern blotting	(iii)	A. Jeffrey	4.	DNA fingerprinting	(iv)	Towbin
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3.	Northern blotting	(iii)	A. Jeffrey														
4.	DNA fingerprinting	(iv)	Towbin														
Option A:	1-i, 2-iv, 3-ii, 4-iii																

Option B:	1-ii, 2-iv, 3-i, 4-iii
Option C:	1-iii, 2-iv, 3-ii, 4-i
Option D:	1-ii, 2-iii, 3-i, 4-iv

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	B
Q3.	D
Q4	C
Q5	C
Q6	D
Q7	A
Q8.	A
Q9.	C
Q10.	B
Q11.	A
Q12.	B
Q13.	B
Q14.	D
Q15.	A
Q16.	A
Q17.	A

Q18.	C
Q19.	B
Q20.	C
Q21.	A
Q22.	A
Q23.	C
Q24.	B
Q25.	B