

PCR Technique Quiz PDF

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During which PCR step are the DNA strands separated?	
AnnealingDenaturationExtensionLigation	
Describe how PCR can be used in forensic science.	
Which enzyme is commonly used in PCR to synthesize new DNA strands?	
○ RNA polymerase	
DNA ligaseTaq polymerase	
Reverse transcriptase	
What is the primary purpose of PCR?	
○ To sequence DNA	
○ To sequence DNA○ To amplify DNA	
○ To sequence DNA	

What is the significance of the annealing temperature in a PCR reaction?



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ave done real time BCB differ from traditional BCB in terms of	dota autnut?
ow does real-time PCR differ from traditional PCR in terms of	uata output?
	//
iscuss the importance of primer design in ensuring PCR spec	cificity.
	,
hat steps would you take to troubleshoot a PCR reaction tha	t is not yielding the expected results?
	/,
/hat is a common problem that can occur if primers are not d	esianed correctly?
mat is a common problem that can occur if primers are not d	esigned confectly:
DNA degradation	
Non-specific amplification	

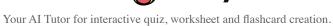
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Increased DNA synthesisEnhanced primer binding	
Explain the role of Taq polymerase in the PCR process.	
	11
What are the main steps of a PCR cycle? (Select all that apply)	
Denaturation	
Annealing	
Extension	
☐ Transcription	
Which of the following are applications of PCR? (Select all that apply)	
☐ Gene cloning	
☐ Protein synthesis	
☐ Forensic analysis	
☐ Medical diagnostics	
What are common issues encountered in PCR? (Select all that apply)	
☐ Primer-dimer formation	
☐ Contamination	
Excess DNA synthesis	
□ Non-specific amplification	
Which of the following is NOT a component of a typical PCR reaction?	
○ Template DNA	
○ RNA polymerase	
○ Primers	
○ Nucleotides (dNTPs)	

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Which of the following are essential components of a PCR reaction? (Select all that apply)
☐ Template DNA
□ Primers
☐ DNA polymerase
☐ Restriction enzymes
What is the main advantage of using a thermocycler in PCR?
O It cools the reaction rapidly
O It automates temperature changes
○ It increases DNA degradation
○ It synthesizes primers
Which type of PCR is used to quantify DNA in a sample?
○ Traditional PCR
○ Real-time PCR (qPCR)
○ Reverse Transcription PCR (RT-PCR)
○ Nested PCR
What factors can influence the specificity of PCR? (Select all that apply)
☐ Primer design
☐ Annealing temperature
□ DNA concentration
Cycle number
Which types of PCR are used for RNA analysis? (Select all that apply)
☐ Traditional PCR
☐ Real-time PCR (qPCR)
Reverse Transcription PCR (RT-PCR)
☐ Nested PCR
What is the role of primers in PCR?
○ To degrade DNA
O To synthesize nucleotides

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O To separate DNA strands