

Unit 9 - Week 7 :

Course outline

How to access the portal?

Week 0 Assignment 0

Week 1 :

Week 2 :

Week 3 :

Week 4 :

Week 5 :

Week 6 :

Week 7 :

- Lecture 33 : Molecular Biology
- Lecture 34 : Molecular Biology (Contd.)
- Lecture 35 : Chemistry of cofactors/coenzymes
- Lecture 36 : Chemistry of cofactors/coenzymes (Contd.)

Quiz : Assignment 7

Feedback for Week 7

Week 8 :

Week 9 :

Week 10 :

Week 11 :

Week 12 :

DOWNLOAD VIDEOS

Assignment Solution

Text Transcripts

Live Session

Assignment 7

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2019-09-18, 23:59 IST.

Use codon table wherever required

		Second Letter			
		U	C	A	G
1st letter	U	UUU Phe UUC UUA UUG	UCU UCC UCA UCG	UAU UAC UAA UAG	UGU UGC UGA UGG
	C	CUU Leu CUC CUA CUG	CCU Pro CCC CCA CCG	CAU His CAC CAA CAG	CGU Arg CGC CGA CGG
	A	AUU Ile AUC AUA AUG	ACU Thr ACC ACA ACG	AAU Asn AAC AAA AAG	AQU Ser AGC AGA AAG
G	GUU Val GUC GUA GUG	GCU Val GCC GCA GCG	GAU Ala GAC GAA GAG	GGU Gly GGC GGA GGG	

1) Which of the following partial amino acid sequences from a protein whose gene you wish to clone would be most useful in designing an oligonucleotide probe to screen a cDNA library?

- (a) Met-Leu-Arg-Leu
(b) Met-Trp-Cys-Trp
(c) Trp-Thr-Met-Met
(d) Trp-Ser-Met-Lys

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:
(b)

2) Reverse transcriptase requires which one of the following for the conversion of a single-strand RNA into a double-strand DNA?

- (a) all four NTPs
(b) all four dNTPs
(c) an RNA template
(d) all four dd-NTPs

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:
(b)

3) Which of the following portions of a longer duplex DNA segment are likely to be recognition sequences of a restriction enzyme?

- (a) 5'-AGTC-3'
3'-TCAG-5'
(b) 5'-ATCG-3'
3'-TAGC-5'
(c) 5'-ACCT-3'
3'-TGGA-5'
(d) 5'-ACGT-3'
3'-TGCA-5'

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:
(d)

4) RNA is analyzed for the location of hairpin folds. Which of the sequences below could form a mini-hairpin?

- (a) 5'-AGGUUCCU-3'
(b) 5'-AGGUUUGGA-3'
(c) 5'-AGGUUUAGG-3'
(d) 5'-AAAAAAAA-3'

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:
(a)

5) The number of amino acid residues will be there in a peptide coded by the mRNA containing the sequences 5'-CAA GGC CCA AUG UUU GCU UCA AAA GCA UAA GCA GCA-3':

- a) 5
b) 6
c) 9
d) 12

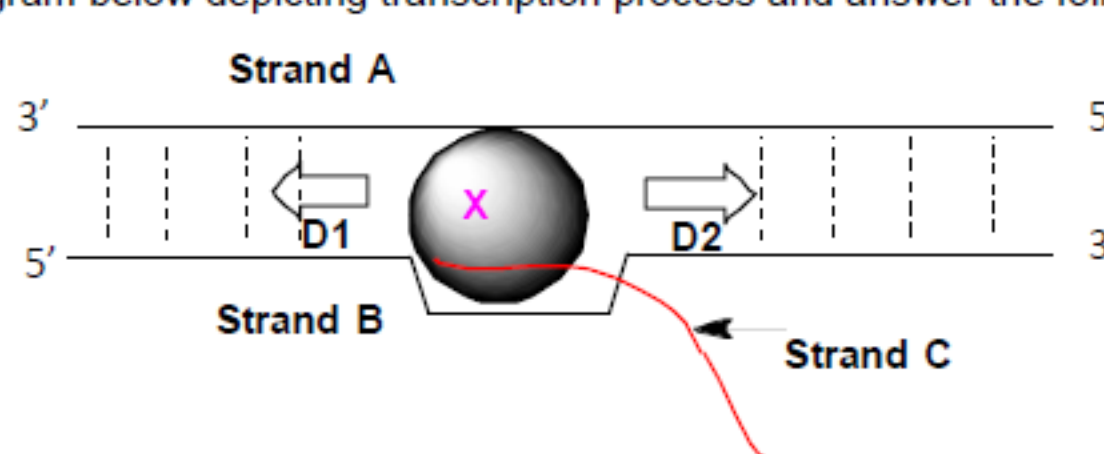
- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:
(b)

Consider the diagram below depicting transcription process and answer the following questions 6-7:



6) Which one of the following statements is TRUE?
a) The strand B is the template strand and strand C is the primer
b) The strand A is the coding strand and strand C is the primer
c) The strand A is the coding strand and strand C non-coding strand
d) The strand A is the sense strand and strand B is the anti-sense strand.

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:
(d)

7) Which one of the following statements is TRUE?
a) X is a DNA polymerase and the direction of polymerization is denoted by D1
b) X is a DNA polymerase and the direction of polymerization is denoted by D2
c) X is a RNA polymerase and the direction of polymerization is denoted by D2
d) X is a RNA polymerase and the direction of polymerization is denoted by D1

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:
(d)

8) Suppose you are doing a PCR to amplify the portion as indicated in RED on the following piece of DNA. How many copies of the amplified portion of ds-DNA will you get after 10 cycles? (Appropriate primers for amplification of the region of interest are used).



- a) 2¹⁰
b) 2⁹
c) 2⁸
d) 2⁷

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:
(c)

9) Which one of the following statements about eukaryotic mRNAs is INCORRECT?

- (a) They are derived from larger RNA precursors.
(b) They result from extensive processing of their primary transcripts before serving as translation components.
(c) They usually have poly (A) tails at their 3' ends.
(d) They have both introns and exons in matured form

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:
(d)

10) The nucleotide sequence on the sense strand of the DNA that is known to encode the carboxy terminus of a long protein of *E. coli* has the following nucleotide sequence: 5'-CCATGCAAAGTAATAGGT-3'. The resulting correct amino acid sequence will be

- a) His-Ala-Lys
b) Pro-Cys-Lys
c) Lys-Cys-Pro
d) Lys-Ala-His

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:
(a)

11) The template strand of DNA known to encode the N-terminus of an *E. coli* protein has the following nucleotide sequence: 5'-GTAGCGTTCATCAGATTT-3'. The sequence for the first four amino acids of the protein will be:

- a) HOOC-Met-Glu-Arg-Tyr-NH₂
b) HOOC-His-Arg-Lys-Val-NH₂
c) NH₂-Met-His-Lys-Tyr-COOH
d) NH₂-Met-Glu-Arg-Tyr-COOH

- (a)
 (b)
 (c)
 (d)

No, the answer is incorrect.

Score: 0

Accepted Answers:
(a)