Fall '14	ВСН	I 370	Name	
Hackert	HW- 1 (20 pts) – Due S		UT eID	
	d homework independently, place all ans	swers on this page, show work t	pelow, on back, or on attached pages	. No credit for late work)
1. Terminolog	<b>=</b> "	uld horro on armostos	laVa around 100	
	amino acid's side chain wo the approximate distance	-	•	a annrovimata
	eter of an alpha helix?	between adjacent aip	na Cs in proteins, and th	c approximate
Glame	tor or an arpha nonx.	1	•	
	e pI of the oligopeptide:	R-I-D-D-L	– E (pI ~	_)
(2)	1 ', 1 ee' ',	11 1 1 1 1 0		
5. Size, charge	e, polarity and affinity are a me one separation techniqu	all characteristics of p	oroteins that can be expl	oned to purity a
Property:	Size	~-	Polarity	Affinity
(4) Technique		<del>-</del>	Totality	7 Millity
1		_		
4. What is the	percentage yield for a puri	fication step that star	ted with 68 mL of solut	ion at 1.1 mg/mL
_	ific activity of 26 and ende	d with 8.5 mL of solu	ition at 2.2 mg/mL with	a specific activity
of 100?	THE SHIP CONTRACTOR OF			
(2) 5 Consider o	"gel filtration" column that	tic 100 am in langth	and 2.25 am in diameter	It is posked
	cal beads that are on averag			
_	$3\%$ of $V_{tot}$ . The column is	=""	•	_
	se (~116 kD) which gave \			
_	molecular mass (kD) for			,, 1,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	kD) ´			
(3)				
6 Proteins A	B, C, and D with MWs co	rresponding to 20kD:	a 225kDa 50kDa and 8	RSkDa and nIs
	ding to 5.3, 6.9, 4.4, 9.6, re			
	nge column at pH 6.9 and			
would yo	u predict to be off the colu	mn last?		•
_				
7. (1) Which p	rotein above would come of	off last when all are l	oaded on a G-200 (GF)	column?
8. (1) Two com	mon affinity tags used to pur	ify a protein are the Hi	s6 tag and the Maltose Bir	nding Protein tag.
	protein is eluted with			
9. Given the fo	llowing standard, dideoxy	sequencing gel result	, what is the sequence (	$5' \rightarrow 3'$ ) of the
			<u> </u>	l
			A SERVICE AND A	
(2) original	template DNA?			
( ) &				
10. What is the	role of luciferase and nam	e of the modern sequ	encing technique that u	ilizes this
protein?	(2)e that I did this work indep		_/	
I hereby declar	e that I did this work indep	pendently:		