

# WI Boyceville Invitational 2016 Forensics Event - Answer Sheet

Saturday, Dec 3, 2016

Team Name: Key

Team Number: \_\_\_\_\_

Names of Participants: Key

## Part A: Qualitative Analysis (20%) - 40 Total Points

	Point value	Answer	Question
1.	3	Lithium Chloride	Identity of Sample A
2.	1	Red Flame Color	On what basis did you make the ID?
3.	1	Rich Allison	Which suspect(s), if any, does this piece of evidence implicate?
4.	3	Glucose	Identity of Sample B
5.	1	Positive Benedict's Test	On what basis did you make the ID?
6.	1	Secretary Joe Rich Allison	Which suspect(s), if any, does this piece of evidence implicate?
7.	3	Ammonium Chloride	Identity of Sample C
8.	1	Ammonia released with base	On what basis did you make the ID?
9.	1	Athletic Casey	Which suspect(s), if any, does this piece of evidence implicate?
10.	3	Sodium Acetate	Identity of Sample D
11.	1	Slight Vinegar Smell	On what basis did you make the ID?
12.	1	Principal Jones Rich Allison	Which suspect(s), if any, does this piece of evidence implicate?
13.	3	Potassium Chloride	Identity of Sample E
14.	1	Purple Flame Test	On what basis did you make the ID?
15.	1	Smart Bob	Which suspect(s), if any, does this evidence implicate?
16.	3	Sodium Hydrogen Carbonate	Identity of Sample F
17.	1	High pH, reactivity with acid	On what basis did you make the ID?
18.	1	Smart Bob, Rich Allison	Which suspect(s), if any, does this evidence implicate?
19.	3	Calcium Carbonate	Identity of Sample G

20.	1	Reactivity with Acid	On what basis did you make the ID?
21.	1	Smart Bob	Which suspect(s), if any, does this evidence implicate?
22.	3	Boric Acid	Identity of Sample H
23.	1	Green Flame Test	On what basis did you make the ID?
24.	1	Smart Bob	Which suspect(s), if any, does this evidence implicate?

**Part B: Polymers and Fibers (20%) – 40 Total Points**

	Point value	Answer	Question
25.	3	PETE	Identity of Polymer I
26.	1	Condensation	What type of polymerization is used to make this polymer?
27.	1	Smart Bob Principal Jones	Which suspect(s), if any, does this evidence implicate?
28.	3	PVC	Identity of Polymer J
29.	1	Addition	What type of polymerization is used to make this polymer?
30.	1	Secretary Joe	Which suspect(s), if any, does this evidence implicate?
31.	3	PS	Identity of Polymer K
32.	1	Addition	What type of polymerization is used to make this polymer?
33.	1	Athletic Casey Rich Allison	Which suspect(s), if any, does this evidence implicate?
34.	3	PMMH	Identity of Polymer L
35.	1	Addition	What type of polymerization is used to make this polymer?
36.	1	None	Which suspect(s), if any, does this evidence implicate?
37.	3	<del>Flax</del> Spandex	Identity of Fiber M
38.	1	<del>Rich Allison</del> Rich Allison	Which suspect(s), if any, does this evidence implicate?
39.	3	Wool	Identity of Fiber N
40.	1	Principal Jones	Which suspect(s), if any, does this evidence implicate?



Part D: Crime Scene Physical Evidence (15%) – 30 Total Points

	Point value	Answer	Question
55.	4	Rich Allison	Which suspect's DNA was found at the scene?
56.	2	Coach Hardy	Which suspects have arches in their fingerprints?
57.	2	Smart Bob, Athletic Casey	Which suspects have loops in their fingerprints?
58.	2	Rich Allison, Principal Secretary	Which suspects have whorls in their fingerprints?
59.	4	RA, P. Sec	Which suspect(s) are implicated by the fingerprint evidence?
60.	2	Automated Fingerprint Identification System	What does AFIS stand for?
61.	2	5%	What approximate percentage of the population has arch fingerprints?
62.	2	70%	What approximate percentage of the population has loop fingerprints?
63.	2	25%	What approximate percentage of the population has whorl fingerprints?
64.	2	~ 150	How many ridges does the average fingerprint have?
65.	2	Iodine Fuming OR Ninhydrin	Prints on a porous surface such as paper could be obtained using which type of process?
66.	2	Ninhydrin Solution Physical Developer Super (CA) glue, D-5000	What are the three main ways to lift fingerprints?
67.	2	Minutiae	What is the name given to the 10 to 16 points of a fingerprint used to compare to a database?

**Part E: Analysis of the Crime Scene (30%) – 60 Total Points**

Write an analysis of the crime that explains which pieces of evidence implicate the suspect you selected. Also provide reasons why the other suspects were not chosen. **You must limit your analysis to this side of the answer sheet only – be concise!**

**Start by filling out the table below. Mark a check mark if the evidence implicates the suspect. Don't forget to write the analysis after the table!**

Suspect	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	CH	DNA	FP
Principal Jones				X					X					X					X
Secretary Joe		X								X									X
Coach Hardy															X				
Athletic Casey			X								X								
Smart Bob					X	X	X	X	X							X			
Rich Allison	X	X		X		X					X		X		X		X	X	X

None