COFFEE SKILLS PROGRAM

Barista Skills

Professional

Practical Examination

Trainer Version

Name: _____

Exam Date: _____ Course Trainer: _____

Email Address: _____

Postal Address: _____

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Company: _____ SCA Membership No: _____

PLEASE NOTE:
Please answer all questions. The passing score is 80%.
This is a closed-book exam. No conferring is allowed.
The maximum allowable time for this examination is 80 minutes.
If the exam is given in a language that is not your first language, an extra 15 minutes is available upon request of the examiner.

Results

Points Earned: _____ / 120 points = _____%

Pass ☐

Fail ☐

Specialty Coffee Association

BARISTA SKILLS

The Professional Practical examination has many different sections and can take a reasonable time to complete when combined together. Feel free to stagger the assessments throughout your course if you prefer. For example, you may do the sensory test first thing in the morning on the last day of your course when the barista's palates are fresh, or the latte art test at the end of the previous day.

Before the test the examiner must ensure that all equipment is in appropriate working order and that it is cleaned in preparation for each candidate.

The examiner should check that they are familiar with this particular model of espresso machine and grinder. They can advise of the operation of this particular model prior to the start of the test. This includes instructions on the operation of this model, not coaching on standard procedures that will be tested.

The examiner should point out the following to the candidate:

- Please be aware that each section includes specific instructions, which I will share with you at the beginning of each section. Failure to follow instructions may result in disqualification.
- At any point in the exam, if you want to know how much time is left, **please ask.** Otherwise, I will only give you a 1 minute and 30 second warning.
- During the test, I will not be able to answer any questions for you or give you any assistance.
- If you believe the equipment is not functioning correctly please inform the examiner, who may stop the time, or possibly re-start the test as appropriate.

1. Brew Recipe Design: Calibrate to hit extraction target (20 minutes maximum)

Design and dial in an espresso brew recipe, using the coffee provided by the examiner, that achieves an 18-22% extraction.

You will be supplied with a standard double shot basket and portafilter, as well as the appropriate equipment, refractometer etc., required to measure the extraction percentage at any time you like throughout the exercise, within the time period.

You have 10 minutes to complete the task. If you go over the allotted time by up to 5 minutes, you will lose 2 points. If you go over the allotted time by up to 10 minutes, you will lose a further 2 points (4 points in total). If you fail to devise and dial in a brew recipe for this coffee that achieves a yield within a range of 18-22% extraction, within this maximum time, you will score 0 points out of 10 in this section.

When you have a recipe that meets **the required extraction target**, indicate that you are ready to your examiner and your time taken will be recorded. The examiner will ask you to confirm the brew recipe and show your measurements to confirm that the task has been completed accurately.

The remainder of this section is not included within the timed element.

Your examiner will ask you to taste your espresso.

You will explain to your examiner your sensory assessment of the brew, using appropriate descriptions for its aroma, flavor and body, with reference to the SCA Flavor Wheel where relevant.

1. Brew Recipe Design				
Coffee Given:				
Time Taken:		**10 points scored if achieved within the 10 minutes. Time penalty points apply over 15 minutes (if applicable). The task must be completed within 20 minutes to pass the overall practical exam.**		
Final Brew Recipe:	Grams in:	Grams out:	Shot Time:	Water temperature:
	TDS:	EXT %:	EBF:	Ratio:

Task achieved within the time			10pts (minus penalty points if applicable)
Procedure for extraction % measurement correct			2pts
Aroma description correct	Record Description:		2pts
Flavor description correct	Record Description:		2pts
Body description correct	Record Description:		2pts
	Subtotal		/18pts

2. Brew Recipe Design: Calibrate to optimize coffee flavor (30 minutes in total)

A. Your examiner will now give you an alternative coffee to work with. Your aim is to devise a brew recipe to optimize the flavor of this coffee as you see appropriate.

- You should first make a prediction of the brew recipe you would like to start with. You should record why you have chosen each calibration **in relation to the specific coffee you have been given and the equipment that you will be using. You have 5 minutes to complete this.**

- You then have 25 minutes to complete the rest of the task.
    - You must calibrate to the predicted recipe, achieving the recipe within the tolerance given.
    - You should assess flavor balance and record the TDS and extraction percentage.
    - You are then required to make a final prediction to fine tune your brew recipe in order to optimize the flavor of the given coffee, (informed by the results you have just achieved). For each element of the brew recipe you change, you will need to predict, what effect a change in this specific element (not the overall recipe) will have on the extraction percentage of the coffee and the overall body of the espresso.
    - On the final attempt you should record descriptions of the coffee's aroma, flavor and body, with reference to the SCA Flavor Wheel, as well as recording the TDS and extraction percentage.

Please note, although 18 – 22% extraction is widely seen as a target of a "balanced espresso", you may choose to aim for a different point if you feel that it best represents the style of espresso you wish to present with this coffee.

You have 25 minutes to complete the task.

2a. Predicted Brew Recipe For Given Coffee			
Details of coffee given (variety, origin, processing method, roast level):			
	Recorded choice:	Reason for choice of brew recipe parameter **for the specific coffee** given:	Pts
a. Grams in chosen (+/- 0.5g):			2pts
b. Grams out chosen (+/- 2g):			2pts
c. Shot time chosen (+/- 2 sec):			2pts
d. Please feel free to note any further alterations you may wish to make and their effect e.g. temperature and pressure (if programmable):			

When you have completed predicting the brew recipe above you must then calibrate it on your equipment (within the tolerance indicated):

Candidate's assessment of actual flavor balance:		
Acidity Intensity:	Sweetness Intensity:	Bitterness Intensity:
0 1 2 3 4 5 6 |------|------|------|------|------|------|	0 1 2 3 4 5 6 |------|------|------|------|------|------|	0 1 2 3 4 5 6 |------|------|------|------|------|------|
Actual TDS:	Actual Extraction %:	

You should make a final prediction on the brew recipe in order to fine tune your first assessment. Changes should be made to two or more of the brew recipe parameters:

2b. Final Recommended Changes To Brew Recipe				
	Recorded choice:	Expected change from this calibration on extraction %:	Expected change from this calibration on body:	Pts
e. Grams in chosen (+/- 0.5g):		- No change + |----------|----------|	- No change + |----------|----------|	2pts
f. Grams out chosen (+/- 2g):		- No change + |----------|----------|	- No change + |----------|----------|	2pts
g. Shot time chosen (+/- 2 sec):		- No change + |----------|----------|	- No change + |----------|----------|	2pts
h. Please feel free to note any further alterations you may wish to make and their effect e.g. temperature and pressure (if programmable):		- No change + |----------|----------|	- No change + |----------|----------|	
i. What do you predict the overall brew recipe will do to change extraction % and TDS		Extraction %: - No change + |----------|----------|	TDS: - No change + |----------|----------|	

Only when this brew recipe has been completed, then you should make the following assessment:

Candidate's assessment of actual flavor balance:		
Acidity Intensity:	Sweetness Intensity:	Bitterness Intensity:
0 1 2 3 4 5 6 |------|------|------|------|------|------|	0 1 2 3 4 5 6 |------|------|------|------|------|------|	0 1 2 3 4 5 6 |------|------|------|------|------|------|
Actual TDS:	Actual Extraction %:	
Was the estimated change in TDS achieved (compare actual with section "i")? Yes (5pts) / No (0pts)	Was the estimated change in extraction % achieved (compare actual with section "i")? Yes (5pts) / No (0pts)	

Task completed within 25 minutes			/5pts
Procedure for extraction % measurement correct			/2pts
Aroma description appropriate	Record Description:		/2pts
Flavor description appropriate	Record Description:		/2pts
Body description appropriate	Record Description:		/2pts
	Total (Parts 2a and 2b)		/35pts

Notes on Section 2:

The aim of this test is for the barista to maximize the potential of any given coffee as they see fit, and to check that the decisions they make to do this are logical and correct.

In **sections a, b and c** they must state what recipe parameters they are going to start with for their given coffee. They must explain the reasons for their decisions. To gain the full two points in each section their reasons must reference the specific requirements of the coffee they have been given or the limitations of the equipment they are going to be using e.g. filter basket size. Their explanations should be logically correct.

In **section d**, the candidate may choose to alter other contributing factors like temperature or pressure. As not all machines may have such controllability this section is not scored, but their comments may have a bearing to the effects of their assessment of the overall brew recipe.

In **sections e, f, and g** points are received for appropriately recording the effect of the change of that specific parameter (not the effect of the overall brew recipe), assuming all other parameters are kept constant.
For example if a candidate chooses to lower the grams in (the dose of ground coffee used), it would be expected that the extraction percentage would increase, but the TDS would decrease. The candidate should have indicated this effect by putting a mark at the appropriate position on the scale provided.
They score a point for the extraction percentage, and a point for the TDS, being correctly identified.

In **section h**, the candidate may choose to alter other contributing factors like temperature or pressure. As not all machines may have such controllability this section is not scored, but their comments may have a bearing to the effects of their assessment of the overall brew recipe.

In **section i**, they are asked to finally **predict** the effect of their overall brew recipe on extraction percentage and TDS.
When they have achieved their brew recipe (within the tolerances set), they are then asked to taste the espresso and record the intensity of the acidity, sweetness and bitterness. This allows them to train their palate rather than just rely on the measured results.

They will then measure the actual TDS and extraction percentage. You can compare this to the results of the previous recipe, to see if their predictions in section “i” were correct and scored appropriately.

At the end of the test they are asked to taste and describe the aroma, flavor and body of their espresso. To gain the points the terminology used should be appropriate to that section, and the flavor description should use terms indicated on the SCA Flavor wheel. Such descriptions are highly subjective (hence the lower points in this section), and so it is expected that the points will be awarded unless the descriptions used are highly inappropriate.

3. Sensory Evaluation (8 minutes)

You will be presented with 4 sets of 3 cups in a standard triangulation format. In each set of 3 cups, 2 coffees are identical and 1 is different. Record the number of the different cup and the reason for the difference.

	SET 1		SET 2		SET 3		SET 4		
DIFFERENT CUP									
Points	/3		/3		/3		/3		Subtotal /12
DIFFERENCE (circle **one** sensory attribute per set)	**MORE**	SWEET ACIDIC BITTER STALE	**MORE**	SWEET ACIDIC BITTER STALE	**MORE**	SWEET ACIDIC BITTER STALE	**MORE**	SWEET ACIDIC BITTER STALE	
Points (both must be correct)	/2		/2		/2		/2		Subtotal /8

Notes on set up for Section 3:

This section is designed to produce a measurable examination of the candidate's ability to discriminate and describe Sweet, Acid, Bitter and Freshness attributes.

Coffee – must be a relatively neutral and clean washed coffee. Do not use any coffees with very distinctive or powerful flavor profiles (Naturals, Geshas, Pacamaras, Yirgacheffes, Indonesians etc).

Roast level should be 80-60 Agtron and not fresher than 2 days from roast, nor longer than 3 weeks.

Develop your filter brew recipe (see below) 24 hours before the examination. When you have the recipe, grind 115g at that grind setting and store, making sure that it has access to air and therefore will stale. Record your grind setting for later.

Fresh brews should be made using a batch brewer at 57.5g/L to hit a TDS target of 1.30 and EXT % of approximately 20%. Examiners may need to adjust brews made using stale coffee, see below for instructions.

Each bowl should be numbered and the sets must be randomized, but you should produce the following sets in the following ways:

Acid set

Pour 190mls of coffee into a 2x suitable tasting vessels. Add 10mls of hot water to each to make 200mls of liquid brew.

Separately, dissolve 5g of Citric Acid in 400ml hot water. Pipette 10ml of this solution into the spiked bowl, to make 200mls with approx. 0.6g/L added Citric Acid. (You will have spare solution in case of mistakes).

Sweet set

Pour 190mls of coffee into a 2 x suitable tasting vessels. Add 10mls of hot water to each to make 200mls of liquid brew.
Separately, dissolve 4g of white sugar in 40ml hot water. Pipette 10ml of this solution into the spiked bowl, to make 200mls with approx. 5g/L added Sugar. (You will have spare solution in case of mistakes).

Bitter set

Pour 190mls of coffee into a 2 x suitable tasting vessels. Add 10mls of hot water to each to make 200mls of liquid brew.
Separately, dissolve 1g of Caffeine powder in 50ml hot water. Pipette 10ml of this solution into the spiked bowl, to make 200mls with approx. 0.8g/L added Caffeine. (You will have spare solution in case of mistakes. You may want to scale up this recipe for greater accuracy in measurement, but please take care of this solution as EXCESS CAFFEINE CAN BE DANGEROUS).

Fresh set

Brew at 57.5g/L using your pre-staled coffee and reserve in a vacuum flask.

Brew at 57.5g/L at the same grind setting using freshly ground coffee and reserve in a vacuum flask.

Check your TDS on both coffees. If they are within 0.1% of each other, pour out 2 bowls of fresh brew and 1 of stale. If the brews are more than 0.1% different in TDS, dilute the stronger with hot water until it matches the weaker. Then pour 2 fresh + 1 stale and triangulate as usual. Make sure to keep temperatures consistent in the bowls.

Examiner tips:
Use cupping bowls and not glasses - the citric acid makes the coffee slightly cloudy
Serve the samples cool (40-50C) if the students are to taste properly
You may want to run this exercise in the morning as a group activity. Students may have tired palates after completing Qs 1 and 2.

4. Workflow and Latte Art (8 minutes)

You must produce 4 milk based drinks demonstrating 2 pairs of 2 different free pour patterns, produced to a very good standard (as per guidelines set out in the SCA latte art standards): You may discard drinks but you may not exceed 8 minutes before presentation to the examiner. Only drinks presented within the 8 minutes will be scored.
You must observe correct barista routine as per the steps outlined below.
This is the final task in the examination and so the work station should be left appropriately clean and ready for the next user.

Latte Art Procedure				
Technique	Requirement	Steps	YES	NO
Espresso	Lose 1 point from the total for each step missed at any time	Removes portafilter and purge group		
		Knockout spent grounds and wipes basket		
		Dose and distribute desired grams of		
		Tamp consistently, level and		
		Clean loose grounds from portafilter		
		Insert portafilter into the group head and start the pump immediately, as the next		
		Observe the flow and stop pump		
		If no further drinks are being made make sure to remove portafilter, knockout spent grinds, clean filter, and return to the group		
Milk	Lose 1 point from the total for each step missed at any time	Fills jug/pitcher with cold milk to the		
		Purges steam wand just prior to use		
		Wipes steam wand immediately after with		
		Purges steam wand immediately after		
	Time Taken:	(<8 minutes):		
Points deducted:				

Latte Art Score sheet				
Pattern type (e.g. Rosetta, Tulip)	Pair 1:		Pair 2:	
	Drink 1	Drink 2	Drink 1	Drink 2
4.1 Very good contrast	/1	/1	/1	/1
4.2 Very good harmony, size and position in cup	/1	/1	/1	/1
4.3 Very good symmetry of pattern	/1	/1	/1	/1
4.4 Foam quality at level 1 or 2 (on SCA foam chart)	/1	/1	/1	/1
4.5 Clearly identifiable pattern	/1	/1	/1	/1
4.6 Very good consistency between pairs	/1	/1	/1	/1
4.7 Beverage temperature within 5c/9F of requested	/1	/1	/1	/1
4.8 Foam depth between 5-15mm on all cups	/1	/1	/1	/1
Subtotal				/32

Notes on set up for Section 4:
Deduct a point from the total latte art score for any procedural mistakes made during production.

Refer to the SCA Latte Art Standards for descriptions of how each section should be represented.

Candidates will be given a temperature to make the drinks to e.g. 60c/140F. This temperature is at the discretion of the examiner but it is advised it reflects cultural norms in your area. The temperature of the drink should then be measures as near to the time it is made as practical (not at the end of the 8 minutes when they are all served). If they are +/- 5c/9f of this target they get a point for each drink.

5. Water assessment and maintenance (10 minutes)

You should demonstrate how to test your water and chart it on the SCA Water Chart. You should explain the implications this will have on your coffee's extraction and flavor.

Examiners may use a bottled mineral water in this test if preferred, to give a variety of results. The water test may be jointly carried out in a group setting, and the results shared. The candidate still has to identify the position on the chart and its consequences individually.

You should also talk through the steps to carry out key maintenance tasks with your examiner.

	Points:	Score
Correct procedure used to measure and chart position on the SCA water chart	5	
The effect of this water's chart position, on extraction and espresso flavor, is accurately described	5	
The procedures for changing grinder burrs is accurately explained	5	

Final Scoring

Section:	Points available:	Candidates Score:
1. Brew recipe design Part 1	18	
2. Brew recipe design Part 2 (2a and 2b)	35	
3. Sensory	20	
4: Drinks Order – quality and Latte Art test	32	
5: Water assessment and maintenance	15	
TOTAL SCORE	120	

POINTS REQUIRED TO PASS = 96 (80%)

END OF EXAM