

# THE BJCP EXAM FOR DUMMIES



# 2013

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# THE BJCP EXAM FOR DUMMIES 2013

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# INTRODUCTION

Updated: 6/23/2013

The **BJCP EXAM FOR DUMMIES** has one purpose – to help you get a passing score on the BJCP Beer Tasting and Written Proficiency examinations. There are better texts available if you want to learn to brew better beer, learn world beer styles, or learn how to taste and evaluate beer. The best use of this guide is to help you cram in the last weeks before the exam. It will help to reinforce what you've already studied.

Here are several texts recommended to help you study for the BJCP exam:

- BJCP Style Guidelines [http://www.bjcp.org/docs/2008\\_stylebook.pdf](http://www.bjcp.org/docs/2008_stylebook.pdf)
- BJCP Study Guide [http://www.bjcp.org/docs/BJCP\\_Study\\_Guide.pdf](http://www.bjcp.org/docs/BJCP_Study_Guide.pdf)
- BJCP Judge Procedures Manual [http://www.bjcp.org/docs/Judge\\_Procedures\\_Manual.pdf](http://www.bjcp.org/docs/Judge_Procedures_Manual.pdf)
- BJCP Judge Instructions [http://www.bjcp.org/docs/SCP\\_JudgeInstructions.pdf](http://www.bjcp.org/docs/SCP_JudgeInstructions.pdf)
- BJCP Beer Score Sheet [http://www.bjcp.org/docs/SCP\\_BeerScoreSheet.pdf](http://www.bjcp.org/docs/SCP_BeerScoreSheet.pdf)
- Competition Cover Sheet [http://www.bjcp.org/docs/SCP\\_CoverSheet.pdf](http://www.bjcp.org/docs/SCP_CoverSheet.pdf)
- How to Judge Beer [http://www.bjcp.org/docs/How\\_to\\_Judge\\_Beer.pdf](http://www.bjcp.org/docs/How_to_Judge_Beer.pdf)
- BJCP Beer Faults Trouble-shooter [http://www.bjcp.org/docs/Beer\\_faults.pdf](http://www.bjcp.org/docs/Beer_faults.pdf)
- BJCP Exam Cover Sheet [http://www.bjcp.org/forms/Exam\\_Cover\\_Sheet.pdf](http://www.bjcp.org/forms/Exam_Cover_Sheet.pdf)
- BJCP Exam Score Sheet [http://www.bjcp.org/forms/Examinee\\_Scoresheets.pdf](http://www.bjcp.org/forms/Examinee_Scoresheets.pdf)
- BJCP FAQ <http://www.bjcp.org/bjcpfaq.php>
- BJCP Members Guide <http://www.bjcp.org/membergd.php>
- Classic Styles Spreadsheet <http://www.bjcp.org/docs/classicstyles.xls>
- Exemplary BJCP Score Sheets
  - <http://www.bjcp.org/docs/examscore1.pdf>
  - <http://www.bjcp.org/docs/examscore2.pdf>
  - <http://www.bjcp.org/docs/examscore3.pdf>
  - <http://www.bjcp.org/docs/examscore4.pdf>
  - <http://www.bjcp.org/docs/examscore5.pdf>
  - <http://www.bjcp.org/docs/examscore6.pdf>

- Homebrewing Vol. 1, by Al Korzonas
- Dave Miller's Homebrewing Guide or The Complete Handbook of Home Brewing, by Dave Miller
- How to Brew, by John Palmer ( <http://howtobrew.com> )
- Beer Companion, by Michael Jackson
- Classic Beer Style Series, by Brewers Publications
- New Brewing Lager Beer, by Greg Noonan
- Principles of Brewing Science, by George Fix
- Designing Great Beers, by Ray Daniels
- Troubleshooting Special Issue, 1987 Zymurgy (vol. 10, no. 4)

Finally, this is NOT an official BJCP document – though it is based on my experience and the experience of many others I have had the pleasure to work with in the BJCP, including but not limited to Grand Master V Judge Steve Piatz, Grand Master II Judge Kris England, National Judge Andrew Ruggles, National Judge Jonathan Crist, and National Judge Gera Exire LaTour, who have worked diligently over the last several years to make the Minnesota Home Brewers Association BJCP Exam Prep Course one of the best in the nation. Also thanks to Scott Bickham, GrandMaster III judge for editing this edition of this document. Finally, thanks to you all for your dedication in helping the hundreds of Beer Judges who have taken our class reach their goals in the BJCP.

- Al Boyce, June 23, 2013

## HOW YOUR BJCP SCORE IS DERIVED

### THE BJCP BEER ENTRANCE EXAM - ONLINE

- The Beer Entrance Exam is an online 200-question, one-hour T/F, multiple choice, and multiple answer test – it is pass/fail.
- Once you pass the online Beer Entrance Exam, you are qualified to take the BJCP Beer Tasting Exam.

### THE BJCP BEER TASTING EXAM

- The BJCP Beer Tasting Exam consists of judging 6 beers in 90 minutes.
- Your BJCP Rank will be initially be determined by your score on the Beer Tasting Exam – up to a maximum of Certified.
- Your Tasting score will be preserved in the BJCP Database, and should you choose to advance beyond the Certified rank, will be averaged with your BJCP Written Proficiency Exam to determine your score for rank advancement purposes.
- You may retake the BJCP Beer Tasting Exam whenever it is available to improve your score.

### THE BJCP WRITTEN PROFICIENCY EXAM

- To advance beyond the Certified rank, you must take the BJCP Written Proficiency Essay Exam – it consists of 20 multiple-choice questions and 5 essay questions in a 90-minute time frame.
- To qualify to be able to take this exam, you must have at least 10 judging points, and a score of at least 80% on the BJCP Tasting Exam.
- Your rank is determined by averaging the score on the Written Proficiency Exam and the Beer Tasting Exam
- 50% each from your score on the Beer Tasting Exam and the Written Proficiency Exam (i.e. - 70% on essay, 60% on taste:  $(70 \times 0.5) + (60 \times 0.5) = 35 + 30 = 65$  Total Score)

## Score Guidelines:

<60: Little knowledge of brewing and/or styles, and/or insufficient communication skills to be a judge. Generally has weak tasting skills.

60s: A basic grasp of fundamentals. May have some big knowledge gaps, but still knows most of the basics. Has an acceptable minimum communication and judging skills.

70s: Knows basics well enough not to have to take the test again to be called “Certified.” Test can have errors and small gaps in answers. Depth in answers is not necessary.

80s: Good knowledge of all subjects. Some errors allowable, but no significant gaps. Some depth indicated. Taste and essay portions should show similar ability.

90s: Excellent knowledge level. No significant errors, and no gaps. Good depth to answers. Obviously an experienced beer taster. Shows evidence of independent thought.

## IN GENERAL:

- **Bring mechanical pencils, not a pen.** Wood pencils have an aroma that will mess up your senses. Bring an extra mechanical pencil or two in case you run out of lead. Erase cleanly if you make a mistake. If you used a pen, it makes it ugly to clean up mistakes. Cross-outs are very difficult to read when grading, and you're bound to lose points for legibility. Speaking of which....
- **Bring an Eraser.** See above. Fully erase all mistakes and the graders won't get confused.
- **Bring a simple calculator.** Cell phones, iPods, iPhones, and other gizmos with "memory" will not be allowed. Just bring one that can add, subtract, multiply and divide.
- **Bring a ruler** – draw quarter to half-inch borders on all of your pages and DON'T write outside of them. Use it to neatly draw your grids also. This can be done prior to the start of the exam.
- **Bring a watch.** Again, no devices with "memory". You have 90 minutes in which to answer 20 multiple choice questions and five essay questions. 90 divided by 6 equals about 15 minutes per item. Do not allow yourself to go over fifteen minutes per item or you will run out of time.
- **Write Neatly!** Print, instead of using cursive if you can. If the graders can't read it, you're not going to get any points no matter HOW GOOD your answer is!

## THE BJCP EXAM FOR DUMMIES 2013

# BJCP WRITTEN PROFICIENCY EXAM

20 T/F QUESTIONS, 5 ESSAY QUESTIONS (worth 50% of your total score)

- **Just before the exam: if you have time, cram on names of Commercial Examples.** It's only one point, but its one point on two different questions. Memorize only ONE for each style. There are no bonus points for two!
- **Don't sweat the statistics.** They're NOT required on the classic examples questions, and on the recipe question, they are only ONE point.
- **Pre-label your blank pages - write the question numbers at the top left hand corner of each page for Section 2, questions 1 – 8** (question 9 is a form that is provided for you, as are the questions for Section 1.) Write "Q.1. Page 1 of \_\_\_\_". This allows you to start easily at any question you like. This page incrementor is for the PAGE only, so if you only use one page, it will read "Q.1. Page 1 of 1". You can do this, and the next two hints, before the Exam Administrator tells you to start to help you get organized. (See "Sample Lined Page for Exam" in the Appendix.)
- **Pre-label the bottom-right corner of each page, inside your margins, with "PAGE \_\_\_\_ of \_\_\_\_".** Do NOT fill in either blank at this time! Do that last, after you've organized all of your questions in the proper order. (See "Sample Lined Page for Exam" in the Appendix.)
- **At the top right corner of each page write your participant number.** It will be the last two digits of the year, the two-digit month code, the two-character State Code abbreviation, a two letter city code and an incremental participant number. For example, an exam given in New York, NY on 6/17/2007 for examinee #3 would be 0706-NYNY-03. Your exam admin will assign you this number.
- **Start a new page for each question.** The Exam Admin will gladly give you more paper if you need it.
- **Spend a few seconds to underline each of the elements of each question on the test pages themselves.** This will aid you in constructing your grids, and will help you not to skip any details required by the question.
- **Try to answer each question on a single page,** but if you need more pages, don't forget to pre-label them with the characteristics listed above.
- **Don't write on the back sides of the paper.** This information may not be photocopied on the pages that are sent to the graders, and hence may not be graded.
- **Create Grids for your answers.** If there are three of a thing (styles, malt types, etc), put them across the top as column heads. Put the characteristics for those things down the side as row heads (i.e., Style Name, Aroma, Appearance, Flavor, Mouthfeel, Distinguishing Characteristics, Classic Example, Similarities, Differences)
- **Bullet answers to questions inside the grids** are not only allowed, but encouraged!
  - Shows organization in your answer
  - Allows you to answer more quickly than if you were writing lengthy descriptions
  - Can cram in more info than if writing full prose sentences
  - If you write SOMETHING in each cell of the grid, you're likely to get at least partial credit.
  - Much easier for the grader to review
  - See?
- **There are two types of questions on the BJCP Exam – "Technical" and "Style"**

- The “Style” questions REQUIRE that you address the four objective categories from the tasting section about EACH BEER on the question:
  - Aroma
  - Appearance
  - Flavor
  - Mouthfeel
- Use all of the sub-section “helper” words from the BJCP score sheet when you are describing each of these elements. For example, for APPEARANCE, comment on:
  - Color
  - Head Clarity
  - Head Color
  - Head Texture
  - Head Duration
- **Guessing – DO it!** Leaving a question blank guarantees that you’ll get no points for it. You don’t get negative points for guessing wrong, and you MIGHT get it right! Good things to guess:
  - Aroma: guess “grainy, sweet malty aroma, slight floral hop nose”
  - Appearance: guess “thin off-white head, small bubbles, yellow color”
  - Flavor: guess “grainy, sweet malty flavor, slight floral hop flavor”
  - Mouthfeel: guess “Medium body, moderate carbonation, mild alcohol warmth, no astringency, no creaminess”
- **READ THE EXAM COVER SHEET CAREFULLY!** Some instructions for the test are stated in the Cover Sheet of the exam, and are equally valid as if they were asked in the question itself. (Cover sheet below is from the BJCP website as of 6/23/2012 – underlines are mine).



**THE BJCP EXAM FOR DUMMIES 2013**  
**COVER SHEET**  
**Exam Cover Sheet and Instructions**

PARTICIPANT CODE NUMBER - YYMM-StCy\_\_

**Written Proficiency Exam:** Answer the questions completely, but don't be verbose. The challenge is to organize your thoughts and express them well in a 90-minute time period. For a passing score, beer style descriptions must include the aroma, appearance, flavor, and mouthfeel descriptions as in the BJCP Style Guidelines. If time permits, for maximum credit, a more complete answer should consider the history of the style, geography, commercial examples, style parameters, unique ingredients, and fermentation techniques and conditions. When a question asks for a classic commercial example of a style the correct answer is one of the styles listed in the BJCP Style Guidelines.

**Beer Judging Exam:** Judge each beer as if you would at a competition, providing complete and accurate descriptions of the aroma, appearance, flavor and mouthfeel. If there are stylistic or technical errors, provide constructive feedback to the brewer.

**Both Exams:**

- Do NOT write your name on your answer sheets.
- Only write on one side of the paper, back sides are not copied.
- Written exam:
  - Number all pages (1 of n, 2 of n. etc.).
  - Start each question on a new sheet of paper.
- Write firmly (with dark pencil/ink) to facilitate photocopying of your exam.
- Do not write to the very edge of the page since that will make it difficult to photocopy the answer sheets and portions of your answer may not get to the graders.
- Please write neatly; handwriting is meant to be read, and not to be solved.
- Manage your time carefully!

**GOOD LUCK!**

**On with the questions....**

## **SECTION 1 (BJCP/ETHICS/JUDGING PROCESS)**

The Process/Ethics part of Section I is not worth any points, but rather there are deductions of 0.5 points for each incorrect selection, for a maximum penalty of 10 points if all selections were wrong.

For the following 20 questions circle the “T” if the statement is true or circle the “F” if the statement is false.

....20 T/F questions will be listed here...

There are a pool of 124 T/F questions in the on pages 28-34 of the Aug.28, 2012 revision of the BJCP Beer Exam Study Guide from which these questions will be drawn. Some of them may be rephrased to call for a FALSE answer instead of a TRUE answer, or vice versa – so read carefully! For example, the following question would have a TRUE answer:

***T*** *A competition organizer may serve as the judge director and may also serve as a judge, provided this person has no knowledge of entries and entrants.*

...but by negating the intent of the question, it would require a FALSE answer:

***F*** *A competition organizer may not serve as the judge director or as a judge, even if this person has no knowledge of entries and entrants.*

These are not “trick” questions – you just have to read them carefully. If you LEARN them (not just MEMORIZE them), you will not get any penalties from this section.

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### SECTION 2 – ESSAY PORTION

The remainder of the written portion of the exam consists of five free-form essay questions, each worth 20% of the total essay score. They will be a combination of “Style” questions and “Troubleshooting” questions, based on the idea that knowledge of brewing techniques is as important to a beer judge as knowledge of beer styles

#### **S.0. Describe and differentiate beers from similar styles**

**For each of the three styles *style-1*, *style-2* and *style-3*, provide a statement describing the styles as well as the difference and similarities between them by addressing each of the following topics:**

8 points	Describe the <u>aroma</u> , <u>appearance</u> , <u>flavor</u> and <u>mouthfeel</u> of each sub-style as in the BJCP Style Guidelines.
5 points	<u>Identify at least one aspect</u> of the ingredients (malts, hops, water chemistry) or background information (history, fermentation techniques and conditions, or serving methods) <u>that distinguishes each style</u> .
2 points	For each of the styles <u>name at least one classic commercial example</u> as listed in the BJCP Style Guidelines.
5 points	Describe the <u>similarities</u> and <u>differences</u> between the three styles

Three beers will be given, usually from very similar categories of beer. The potential list of beers to be compared is in the appendix of this study guide, under “**COMBINED Possible (named) Section II Beers.**” Note: The “Classic Commercial Example” MUST BE one that is listed in the BJCP Style Guidelines to get credit (also listed in the August 2010 revision of the BJCP Exam Study Guide.)

The easiest way to make sure you address all of the elements asked for in the question is to create a grid, with the characteristics down the left side, and the three styles listed across the top. The elements of the question are underlined in the question grid above. (Again, underlines are MINE – they will not be underlined on the actual exam unless YOU do it – hint, hint.) Once you create your grid (a ruler helps...), then all you have to do is “bullet” the appropriate information in each cell. **DO NOT LEAVE ANY CELL BLANK!** It’s better for the aroma cell to guess either “malty” or “low malt” and “hoppy” or “no hop aroma” than to skip it. The grader can’t give you partial credit – if you didn’t try to answer the question.

Under each major section of a score sheet (Aroma, Appearance, Flavor, Mouthfeel, and Overall) will be several “key words” (i.e. under Aroma - malt, hops, esters, and other aromatics.) Try to address EACH of those key words in your bullets for maximum points. On the next page is a sample answer to this question:

STYLE	Dry Stout	Strong Bitter (EPA)	Robust Porter
<b>AROMA</b>	<ul style="list-style-type: none"> <li>* Roast accentuated</li> <li>* Some coffee</li> <li>* Slight chocolate</li> <li>* No diacetyl</li> <li>* Esters low to none</li> <li>* Hops low to none</li> </ul>	<ul style="list-style-type: none"> <li>* Mod high to mod low hops</li> <li>* Med to Med high malt</li> <li>* Low to moderately strong caramel</li> <li>* Med low to Med high fruitiness</li> <li>* Low diacetyl OK</li> <li>* Slight sulfur/alcohol OK</li> </ul>	<ul style="list-style-type: none"> <li>* Roasty, “burnt” malt</li> <li>* Grainy, bready, toffee-like, caramel, chocolate, coffee OK</li> <li>* Rich, sweet</li> <li>* Hops low to high</li> <li>* Fruitiness mod to none</li> <li>* Diacetyl low to none</li> </ul>

<b>APPEARANCE</b>	<ul style="list-style-type: none"> <li>* Black to Brown</li> <li>* Can be opaque, else clear</li> <li>* Thick, creamy tan head, long lasting</li> </ul>	<ul style="list-style-type: none"> <li>* Golden to deep copper</li> <li>* Brilliantly clear</li> <li>* White/off-white head</li> <li>* Low head, dissipates gradually</li> </ul>	<ul style="list-style-type: none"> <li>* Med to dark brown or black</li> <li>* Can be opaque, else clear</li> <li>* Full, tan head, lingers</li> </ul>
<b>FLAVOR</b>	<ul style="list-style-type: none"> <li>* Moderate roast</li> <li>* Optional acidic sour</li> <li>* Med to high bitterness</li> <li>* Dry, coffee like finish</li> <li>* Bittersweet chocolate</li> <li>* Med low to no fruitiness</li> <li>* Med low to no hop flavor</li> <li>* No diacetyl</li> </ul>	<ul style="list-style-type: none"> <li>* Med to med-high bitterness</li> <li>* Even balance malt-to-hops, or slightly to bitter</li> <li>* Supporting malt</li> <li>* Moderately low to strong caramel sweetness</li> <li>* Moderate to moderately high hops</li> <li>* Hops should not dominate malt</li> <li>* Nutty, biscuity</li> <li>* Low sulfur, alcohol, mineral OK</li> <li>* Slight diacetyl OK</li> </ul>	<ul style="list-style-type: none"> <li>* Strong malt flavor</li> <li>* Burnt, black malt</li> <li>* Chocolate, coffee ok</li> <li>* Roasty dry finish</li> <li>* Dry to medium sweet</li> <li>* Med to high bitterness</li> <li>* Hop flavor low to moderately high</li> <li>* Diacetyl low to none</li> <li>*Fruitiness moderate to none</li> </ul>
<b>MOUTHFEEL</b>	<ul style="list-style-type: none"> <li>* Med light to full body</li> <li>* Creamy</li> <li>* Low to Moderate carbonation</li> <li>* Light astringency from roast grains</li> <li>* Low alcohol warmth</li> </ul>	<ul style="list-style-type: none"> <li>* Med light to med full body</li> <li>* Low to moderate carbonation</li> <li>* Slight alcohol warmth</li> <li>* No astringency</li> <li>* No creaminess</li> </ul>	<ul style="list-style-type: none"> <li>* Med to med full body</li> <li>* Moderately low to mod high carbonation</li> <li>* Slight alcohol warmth</li> <li>* Slight astringency from roast grains</li> <li>* Slight creaminess OK</li> </ul>
<b>DISTINGUISH</b>	<ul style="list-style-type: none"> <li>* Originally a fuller, creamier version of London Porter – no longer true</li> <li>* Sometimes called “Irish” Stout</li> </ul>	<ul style="list-style-type: none"> <li>* High gravity Bitter</li> <li>* Often bottled vs. casked</li> <li>* Broad style, open to interpretation</li> </ul>	<ul style="list-style-type: none"> <li>* Stronger, hoppier, roastier version of Porter</li> <li>* English version have subtle English hops</li> <li>* Malty, complex and flavorful</li> </ul>
<b>CLASSIC</b>	Guinness Draught Stout	Fuller’s ESB	Anchor Porter
<b>SIMILARITIES</b>	<ul style="list-style-type: none"> <li>* 30+ IBU levels</li> <li>* English Ingredients</li> <li>* Malt emphasis</li> <li>* Dark like Porter</li> </ul>	<ul style="list-style-type: none"> <li>* 30+ IBU levels</li> <li>* English Style, like Porter</li> <li>* English Ingredients</li> <li>* Malt emphasis</li> </ul>	<ul style="list-style-type: none"> <li>* 30+ IBU levels</li> <li>* English, like Bitter</li> <li>* English Ingredients</li> <li>* Malt emphasis</li> <li>* Dark like Stout</li> </ul>
<b>DIFFERENCES</b>	<ul style="list-style-type: none"> <li>* Irish Style, not English</li> <li>* Darker than Bitter</li> <li>* Least alcohol</li> <li>* Less Chocolate than Stout</li> <li>* More Roast than Stout</li> <li>* Less Hop Flavor/ Aroma than Bitter</li> </ul>	<ul style="list-style-type: none"> <li>* Lighter than Stout or Porter</li> <li>* Most Hop Flavor/ Aroma</li> <li>* More Caramel</li> <li>* Roast or Chocolate inappropriate</li> </ul>	<ul style="list-style-type: none"> <li>* Darker than Bitter</li> <li>* More Chocolate than Stout</li> <li>* Less Roast than Stout</li> <li>* Less Hop Flavor/ Aroma than Bitter</li> </ul>

**THE BJCP EXAM FOR DUMMIES 2013**

**2. Troubleshooting**

**T.1. Describe and discuss the following beer characteristics - a) characteristic-1, b) characteristic-2, and c) characteristic-3. What causes them and how are they avoided and controlled? Are they ever appropriate, and if so, in what beer styles? Address the following topics:**

6 points	Describe each characteristic and how it is perceived.
8 points	Identify the causes and controls for each characteristic.
6 points	Identify appropriate/inappropriate styles.

Start by building a grid like this that takes up the entire page. Fill in the characteristics you're describing in place of #1, #2, and #3:

	<b>Characteristic #1</b>	<b>Characteristic #2</b>	<b>Characteristic #3</b>
<b>Describe</b>			
<b>How caused? Avoided/Controlled?</b>			
<b>Ever Appropriate? If so, which styles?</b>			

The grid below has been turned the other way, in order to more easily cover all the troubleshooting categories:

<b>Characteristic</b>	<b>Describe</b>	<b>Ever Appropriate? If so, which styles?</b>	<b>How is it caused?</b>	<b>How can it be avoided/controlled?</b>
<b>Acetaldehyde</b>	* Green apples * Grassy	Yes, Light American Lagers	* Premature removal from yeast * Bacterial Spoilage, * Oxidation	* Allow ferment to complete, * Practice good sanitation and beer handling to avoid O2 contact
<b>Alcoholic</b>	* Spicy * Vinous * Prickly mouthfeel * Fusels	Yes, Strong Ales and Lagers	* High amt of fermentables * Under pitching * Low O2 or FAN	* Pitch sufficient yeast quantity * Aerate wort pre-pitching
<b>Astringency</b>	* Mouth-puckering * Flavor * Mouthfeel	Yes, Flanders Red	* Extraction of tannins – over crushing, oversparging * alkaline water * Lengthy hop immersion times * Polyphenols from acetobacter * Oxidation * Spices	* Don't over crush * Keep sparge temp low * Use acidified water in sparge, * Reduce hop immersion time * Practice good sanitation * Reduce spice additions

<b>Bitterness</b>	* Mouth-puckering * Bitter * Aroma * Flavor * Mouthfeel	Yes, * IPAs * Pale Ales * English Bitters	* High AAU hops * Lengthy hop boil times	* Use hops with lower alpha acids * Reduce hop boil times
<b>Buttery</b>	* Butterscotch * Diacetyl * Aroma * Flavor * Mouthfeel	Yes, * Scotch Ales * Bitters * Czech Pils * Northern English Brown	<b>Diacetyl:</b> * Premature racking * Low ferment temps * Mutant yeast * Lactic acid bacteria	* Reduced by yeast - allow complete fermentation * Properly aerate wort prior to pitching * Do a diacetyl rest (2 days at the end of primary @ 65 F) * Use healthy pure yeast, * Practice good sanitation
<b>Cardboard</b>	* Papery * Stale * Flavor * Aroma	No, N/A	* Aeration of hot wort * Exposure of higher alcohols in finished beer to oxygen * Old beer	* Avoid splashing hot wort * Carefully package beer to avoid oxygen contact * Serve beer in an appropriate amount of time
<b>Cloudiness</b>	* Cloudy * Appearance	Yes, * Wheat Beers * Lambic * American Wheat	<b>Chill Haze:</b> Insufficient conversion time <b>Permanent Haze:</b> High Sparge temps <b>Bacterial Haze:</b> Poor Sanitation <b>Powdery yeast</b>	* Longer mash * Use Protein rest * Use finings * Use filtration * Reduce Sparge Temps * Practice better sanitation * Choose a less powdery yeast
<b>Cooked Corn</b>	* DMS (dimethyl sulfide) * Vegetal * Aroma * Flavor * Precursor (dimethyl sulfoxide) occur naturally in malt, turned into DMS with heat, evaporates	Yes, * American lagers * Cream ales	* Covered boil * Zymomonas bacteria * High level of adjuncts	* Use uncovered full-rolling boil * Practice good sanitation * Reduce adjuncts in mash
<b>Fruitiness</b>	Esters: * Strawberries * Plums * Apricots etc * Flavor * Aroma	Yes, * American Pale Ale * Kolsch	* Alcohols combining with acids at higher ferment temps (Ethyl acetate, Isoamyl acetate, Ethyl Hexanoate)	* Reduce fermentation temperatures * Choose a different yeast strain

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<b>Light Body</b>	<ul style="list-style-type: none"> <li>* Watery</li> <li>* Weak</li> <li>* Mouthfeel</li> </ul>	Yes, * American Light Lagers * Lambics	<ul style="list-style-type: none"> <li>* Lack of dextrins</li> <li>* Poor quality malt</li> <li>* Large pct of sugar</li> <li>* Over-long protein rest</li> <li>* Low mash temperature</li> </ul>	<ul style="list-style-type: none"> <li>* Use quality malt</li> <li>* Keep percentage of sugar small</li> <li>* Reduce length of protein rest</li> <li>* Use dextrin or wheat malt, flaked wheat</li> <li>* Raise mash temperature</li> </ul>
<b>Low Head Retention</b>	<ul style="list-style-type: none"> <li>* Flat Appearance</li> <li>* Mouthfeel</li> </ul>	Yes, * Lambics * High Alcohol Beers	<ul style="list-style-type: none"> <li>* Insufficient proteins in beer causes high surface tension</li> <li>* Dirty/oily glasses</li> <li>* Low protein grist</li> </ul>	<ul style="list-style-type: none"> <li>* Shorten protein rest</li> <li>* Use clean well-rinsed glasses</li> <li>* Use flaked wheat or barley</li> <li>* Lower alcohol by lowering grist bill</li> <li>* Use hops with high isoalpha acids</li> </ul>
<b>Phenolic</b>	<ul style="list-style-type: none"> <li>* Band-aid</li> <li>* Medicinal</li> <li>* Clove-like</li> <li>* Plastic</li> <li>* Smoky</li> <li>* Peppery</li> <li>* Aroma</li> <li>* Flavor</li> </ul>	Yes, * Some Belgian Ales * Smoke beers * Some Wheat beers	<ul style="list-style-type: none"> <li>* Wild yeasts</li> <li>* Improper sanitation</li> <li>* Some malt types</li> <li>* Some yeast types</li> </ul>	<ul style="list-style-type: none"> <li>* Use pure yeast strains</li> <li>* Practice good sanitation</li> <li>* Use “clean” malt</li> <li>* Use yeast less prone to phenol production</li> </ul>
<b>Sherry-like</b>	<ul style="list-style-type: none"> <li>* Sherry</li> <li>* Vinous</li> <li>* Wine-like</li> <li>* Paper like</li> <li>* Old</li> </ul>	Yes, * Barleywines * English Old Ales	<ul style="list-style-type: none"> <li>* Oxidative yeasts acting on higher alcohol beers creates aldehydes (i.e. 2-trans-nonenal)</li> </ul>	<ul style="list-style-type: none"> <li>* Use a different yeast strain</li> <li>* Create less alcohol by lowering grist bill</li> <li>* Serve beer younger</li> <li>* Ferment cooler</li> </ul>
<b>Sourness</b>	<ul style="list-style-type: none"> <li>* Tart</li> <li>* Sour</li> <li>* Aroma</li> <li>* Flavor</li> <li>* Mouthfeel</li> </ul>	Yes * Lambics * Flanders Ale * Berliner Weisse	<ul style="list-style-type: none"> <li>* Lactic Acid (from lactic acid bacteria)</li> <li>* Acetobacter (from Acetic acid)</li> </ul>	<ul style="list-style-type: none"> <li>* Practice proper sanitation</li> <li>* Don’t employ over-lengthy mash or low temp mash</li> </ul>

### T.3. What are body and mouthfeel?

Explain how the brewer controls body and mouthfeel in his/her beer? Cover the following topics:

10 points	Describe Body and Mouthfeel.
10 points	Explain how the brewer controls body and Mouthfeel.

	What is it?	How to control?
<b>BODY</b>	* <b>Body</b> is a sub-characteristic of Mouthfeel	(See below)
<b>MOUTHFEEL</b>	* <b>Mouthfeel</b> is the tactile character of beer, how it “feels” in your mouth. It has five sub-components: Body, Alcohol Warmth, Creaminess, Astringency and Carbonation.	* Primarily controlled by the amount of dextrins and medium length proteins in the finished beer.
	* <b>Body</b> is the viscosity of a beer. On a viscosity scale of water to molasses, water is a “thin” body, and molasses would be a “thick” body.	* Increasing unfermented dextrins will give the perception of a “bigger, thicker” body – use more grist, mash hotter (153 F) * Reducing unfermented dextrins will give the perception of a “smaller, thinner” body – use less grist, mash cooler (148F)
	* <b>Alcohol warmth</b> is the sensation of warmth or burning you feel as the beer goes down your throat. Whiskey would be at the high end of alcohol warmth.	* Reduce fermentables, ferment cooler to reduce alcohol warmth and fusels * Increase fermentables, ferment warmer to increase alcohol warmth and fusels * Choose yeast for alcohol tolerance desired
	* <b>Creaminess</b> is the sensation of “smoothness” or “roundness” in a beer. It is the opposite of “Crispness.”	* A percentage of Oats in the grist can cause a creamy sensation. * Use nitrogen to “carbonate” * Use lactose to increase perception
	* <b>Astringency</b> is the puckery sensation you get from a beer.	* Primarily caused by tannins (sometimes mistakenly attributed to hop bitterness) * Can also be caused by a high percentage of roast or dark malt in the grist * Can also be caused by lingering hop bitterness * Reduce tannins by: - Keeping sparge under 168F - Ending sparge when gravity of runoff reaches 1004
	* <b>Carbonation</b> is the sparkling sensation you feel in your mouth, or in extreme cases, in your nose. Champagne or Seven-Up soda would be at the high end of carbonation.	* To increase bottle carbonation, add more priming sugar and/or a small amount of fresh yeast at bottling. * To increase carbonation in kegging, increase the CO2 pressure. * Unwanted high carbonation can be decreased by completely fermenting the beer prior to packaging.



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### 3. INGREDIENTS

**T.4. Discuss hops, describing their characteristics, how these characteristics are extracted, and at least four distinct beer styles with which the different varieties are normally associated. Address the following topics:**

6 points	Describe hop characteristics.
6 points	Discuss how hop characteristics are extracted.
8 points	Identify associated beer styles.

**Discuss hops:**

1. Active ingredient: Lupulin, gland of the female plant of *Humulus Lupulus*
2. Oils and Resins: Resins contain Alpha and Beta acids, Oils contain aromatics
3. Humulone and Cohumulone
4. Alpha and Beta acids – Alpha cause the bittering to occur in beer, Beta do not isomerize, but contribute to aroma
5. Isomerization – Through boiling, changing the structure of the molecules in hop alpha and beta acids so as to make them water soluble.
6. IBUs/Formula: 
$$IBU = \frac{7490 \times \text{Weight(oz)} \times \text{AA\%} \times U}{V(\text{gallons})}$$

Hop Characteristics	How these characteristics are extracted
Antibacterial/Preservative	Boiling hops in wort.
Bitterness	Boiled for 60 minutes or longer from the end of the boil. Hop utilization is about 25% in this phase.
Flavor	Boiled for 40-25 minutes from the end of the boil. Hop utilization is about 10% in this phase.
Aroma	Boiled for 15 minutes or less from the end of the boil. May also be steeped by throwing them in after flame-out. Hop utilization is 5% or less in this phase.
Aroma	Dry Hopping. Added to the secondary fermenter for aroma only.

**Identify at least four distinct beer styles with which different varieties of hops are associated:**

Hop Variety	Country	Characteristics	Associated Style
Hallertauer, Tettnanger, Spalt	Germany	Noble hops. Low in bitterness, high on aroma, spicy, floral	German Pilsner, Bocks, Alts
East Kent Goldings, Fuggles	England	English hops: Good for bittering, flavor and aroma, earthy, tobacco	English Pale Ale, Porter
Saaz	Czech Republic	Floral, mild, sweet	Bohemian Pilsner
Cascade, Centennial, Columbus, Amarillo	America (Pacific Northwest)	Citrusy, grapefruity	American IPA, American Pale Ale
Northern Brewer	Europe, America	Rustic, Woody	California Common
Styrian Goldings	Austria and Slovenia	Spicy	Witbier, Belg. Pale Ale

**T.8. Discuss the importance of water characteristics in the brewing process and how water has played a role in the development of at least four distinct world beer styles. Address the following topics**

10 points	Describe the importance of water characteristics in the brewing process.
10 points	Describe the role in the development of at least four beer styles.

In my opinion, this is one of the more difficult questions that can be on the BJCP exam. Water is obviously a VERY important part of brewing, and books have been written about it. The example below is one way of answering this question that SHOULD get you a fairly decent score.

**WATER TREATMENT METHODS**

METHOD	IMPORTANCE
Boiling	* Removes chlorine, kills bacteria
Charcoal Filtration	* Removes chloramines
Reverse Osmosis	* 100% r/o not recommended – strips out needed minerals
Minerals	Essential for healthy fermentation * Iron * Manganese * Copper * Zinc
Salts	Commonly used: Gypsum, (CaSO <sub>4</sub> ), Calcium Carbonate (CaCO <sub>3</sub> ), Magnesium Sulfate (MgSO <sub>4</sub> ) Cations * Calcium – 10-20ppm needed for yeast nutrition * Sodium – Accentuates sweetness at low levels Anions * Bicarbonate – Neutralizes acids in dark malt * Chloride – Accentuates sweetness at low levels * Sulfate – Accentuates hop bitterness
Acids	Used to reduce alkalinity (if necessary) * Lactic acid * Sulfuric acid

**pH (Power of Hydrogen):**

WATER TYPE	pH
Pure Water	7.0
Acidic	0 – 6 pH
Alkaline	8-14 pH
Proper mashing level	5.2 – 5.7 pH

**BEER STYLES (choose at least 4)**

CITY	BEER STYLE	IMPORTANCE OF WATER
Plzen	Bohemian Pilsner	Soft, low mineral content across the board, tends to decrease the perception of hop bitterness. The most ion-free brewing water in the world. Decoction mashing needed due to lack of minerals to aid enzymatic reactions.
Dortmund	Dortmunder Export	High sulfates accentuate hop bitterness. Tastes “minerally”.
Munich	Oktoberfest	High alkaline and carbonate water balances acidifying effect of dark

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		malts.
Munich	Dunkel	High in carbonates, Carbonates increase color extraction during sparging which makes production of light colored worts difficult, hence the development of Munich Dunkel. Waters high in carbonate tend to be alkaline and make a shift to a more acidic pH, favorable for mash conditions, difficult. Additions of small amounts of dark roast malts help shift the pH to more acidic conditions. This again favors the Dunkel style.
Vienna	Vienna Lager	Hard, carbonate-rich water extracts the color from Vienna malt.
Burton	English Pale Ales	Extremely hard water - CaSO <sub>4</sub> (Calcium Sulfate) & HCO <sub>3</sub> <sup>-</sup> (Hydrocarbonate), accentuates bitterness, gives drier and fuller flavor, and emphasizes hop bitterness.
Dublin	Dry Stout	High in Ca <sup>++</sup> (Calcium) & HCO <sub>3</sub> <sup>-</sup> (Hydrocarbonate), similar to Munich but slightly higher in mineral content across the board. Waters high in carbonate tend to be alkaline and make a shift to a more acidic pH, favorable for mash conditions, difficult. Additions of small amounts of dark roast malts help shift the pH to more acidic conditions.
Edinburgh	Scottish Ales	Local water often lends a “smoky” character when combined with yeast and lower fermentation temperatures.
London	Porter	High alkaline and carbonate water balances acidifying effect of dark malts. Very similar to Dublin.

**T.15. This question addresses two separate ingredients, malt and yeast. Please provide the following information in your answer: (1) Identifying and describing the different types of malts by their color and the flavor they impart to the beer, and give at least four distinct styles with which specific malts are associated. (2) Provide five distinct considerations in selecting the appropriate yeast strain for a given beer style.**

5 points	Identify types of malt.
7 points	Identify types of malt associated with at least four beer styles.
8 points	Provide five distinct yeast strain selection considerations.

**A. Identify and describe the different types of malts by their color and the flavor they impart to the beer. Give at least four distinct styles with which specific malts are associated.**

Identify	Describe	Color	Flavor	Styles
<b>Base Malts</b>	<ul style="list-style-type: none"> <li>• 2 and 6 row barley</li> <li>• Fully modified</li> <li>• Kilned at 130-180F</li> </ul>	<ul style="list-style-type: none"> <li>• Straw</li> <li>• Gold</li> <li>• Yellow</li> </ul>	<ul style="list-style-type: none"> <li>• Bread crumbs</li> <li>• Crackers</li> </ul>	<ul style="list-style-type: none"> <li>• Pale Ales</li> <li>• Pilsner</li> <li>• Tripel</li> </ul>
<b>Toasted Malts</b>	<ul style="list-style-type: none"> <li>• Victory, Vienna, Munich</li> </ul>	<ul style="list-style-type: none"> <li>• Amber</li> <li>• Copper</li> <li>• Red</li> </ul>	<ul style="list-style-type: none"> <li>• Biscuit</li> <li>• Toasted Breadcrumb</li> <li>• Baking Bread</li> </ul>	<ul style="list-style-type: none"> <li>• California Common</li> <li>• N.German Alt</li> </ul>
<b>Crystal Malts</b>	<ul style="list-style-type: none"> <li>• Various Lovibond-rated Crystal and Caramel</li> <li>• Fully modified</li> <li>• Heated at 50% moisture content to 150-170F</li> <li>• Mash starches inside husk</li> <li>• Kilned to desired color</li> </ul>	<ul style="list-style-type: none"> <li>• Amber</li> <li>• Copper</li> <li>• Red</li> </ul>	<ul style="list-style-type: none"> <li>• Caramel</li> <li>• Toffee</li> <li>• Cookies</li> </ul>	<ul style="list-style-type: none"> <li>• Dark American Lager</li> <li>• American Amber</li> </ul>
<b>Roast Malts</b>	<ul style="list-style-type: none"> <li>• Chocolate, Black, Roast</li> <li>• Under modified</li> <li>• Kilned at 5% moisture</li> <li>• Kilned at 420-450F for up to 2 hours</li> <li>• No diastatic ability</li> </ul>	<ul style="list-style-type: none"> <li>• Brown</li> <li>• Black</li> </ul>	<ul style="list-style-type: none"> <li>• Chocolate</li> <li>• Coffee</li> </ul>	<ul style="list-style-type: none"> <li>• Stouts</li> <li>• Porters</li> </ul>
<b>Non-Barley</b>	<ul style="list-style-type: none"> <li>• Wheat, Rye, Corn, Rice</li> <li>• May require more intensive mash process</li> </ul>	<ul style="list-style-type: none"> <li>• May cause cloudiness</li> </ul>	<ul style="list-style-type: none"> <li>• Bready, wheat, corn</li> <li>• Minty</li> <li>• Peppery</li> </ul>	<ul style="list-style-type: none"> <li>• Weizen</li> <li>• Roggenbier</li> <li>• American Lagers</li> <li>• Cl. American Pilsner</li> </ul>

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### B. Provide five distinct yeast strain selection considerations.

Consideration	Effect on Beer
Apparent Attenuation	<ul style="list-style-type: none"><li>• Less residual sweetness (lager yeast)</li><li>• More alcohol</li><li>• Less body</li></ul>
Alcohol Tolerance	<ul style="list-style-type: none"><li>• Greater Alcohol by Volume</li></ul>
Flocculation	<ul style="list-style-type: none"><li>• Less time required for clearing</li><li>• Potentially clearer beer</li></ul>
Temperature	<ul style="list-style-type: none"><li>• Fruity esters for ale yeasts (higher temperatures)</li><li>• Clean, ester-free beers for lager yeasts (lower temps)</li><li>• Lager yeasts require longer time to finish</li></ul>
Ester/Phenol Production	<ul style="list-style-type: none"><li>• Fruity flavors/aromas for yeasts high in ester production</li><li>• Clean, crisp flavors/aromas for yeasts low in ester production</li><li>• Spicy, clove or peppery phenols in Belgian styles and Bavarian Wheat beers</li></ul>
Diacetyl Production	<ul style="list-style-type: none"><li>• Butter or Butterscotch flavors</li><li>• Acceptable in low amounts in some styles</li></ul>

## 4. THE BREWING PROCESS

**T.9. Describe the brewing techniques. A) *Kräuesening* B) *Adding Gypsum* C) *Fining*. How do they affect the beer?**

10 points	Discuss each characteristic.
10 points	Identify their effect on the finished beer.

	<b>Describe</b>	<b>Effect on Beer</b>
<b>Kräuesening</b>	<ul style="list-style-type: none"> <li>* The addition of a portion of actively fermenting wort to a wort that has finished fermenting.</li> </ul>	<ul style="list-style-type: none"> <li>* To provide "natural" carbonation.</li> <li>* Also reduces residual diacetyl</li> <li>* Used for most German and American Lagers</li> <li>* May contribute acetaldehyde ("green" beer character) in the finished beer.</li> <li>* Consistent with Rheinheitsgebot – adding CO2 not allowed</li> </ul>
<b>Adding Gypsum</b>	<ul style="list-style-type: none"> <li>* Gypsum is Calcium Sulfate</li> <li>* Common brewing salt</li> <li>* Key salt for “Burtonization”</li> </ul>	<ul style="list-style-type: none"> <li>* Increases Ca<sup>++</sup> and SO<sub>4</sub><sup>—</sup></li> <li>* Calcium helps yeast metabolism in proper levels,</li> <li>* Calcium allows the wort to acidify</li> <li>* Critical to proper enzyme function.</li> <li>* Sulfate lends a soft edge to hop bitterness by affecting alpha-acid extraction and creating a synergistic perception effect.</li> </ul>
<b>Fining</b>	<ul style="list-style-type: none"> <li>* The addition of a compound to wort or beer.</li> <li>* Added to the boil for hot break: Irish moss or Whirlfloc</li> <li>* Added to the secondary: Isinglass, Bentonite, Polyclar, Sparkloid</li> </ul>	<ul style="list-style-type: none"> <li>* Coagulates proteins to clarify beer</li> <li>* Precipitate tannins and/or proteins that may cause haze, or even flavor instability.</li> </ul>

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**T.11. Describe and explain the role of diastatic and proteolytic enzymes in the brewing process and how they affect the characteristics of the finished beer. Address the following topics:**

10 points	Describe and explain the role of diastatic and proteolytic enzymes in the brewing process
10 points	Describe how they affect the finished beer.

	<b>Proteolytic</b>	<b>Diastatic</b>	
<b>Works on</b>	Proteins	Starches	
<b>Subset</b>	Proteolytic	Beta Amylase	Alpha Amylase
<b>Temperature</b>	113-127F (aka "Protein" rest)	130-150F (aka "Saccharification")	149-158F (aka "Saccharification")
<b>Describe/Explain</b>	<ul style="list-style-type: none"> <li>* Proteinase breaks down proteins into smaller fractions such as polypeptides – necessary for good head retention.</li> <li>* Peptidase breaks down polypeptides into peptides and amino acids, essential for proper yeast growth and development</li> </ul>	<ul style="list-style-type: none"> <li>* Starches are gelatinized</li> <li>* Beta amylase enzymes breaks off maltose units from reducing ends of starches</li> <li>* Unable to break down largest units of starches</li> </ul>	<ul style="list-style-type: none"> <li>* Alpha amylase enzymes breaks 1-4 links from starches at random</li> <li>* Unable to break down into smallest units of starches</li> </ul>
<b>Effect on Beer</b>	<ul style="list-style-type: none"> <li>* Reduces cloudiness</li> <li>* Too long a protein rest can reduce head</li> </ul>	<ul style="list-style-type: none"> <li>* Creates more fermentable wort</li> <li>* Thinner bodied beer</li> </ul>	<ul style="list-style-type: none"> <li>* Creates more dextrinous wort</li> <li>* Thicker bodied beer</li> </ul>

NOTE: If you get this question, the big hint is the word "Proteolytic" – remember "Proteo" means "proteins." You'll just have to remember that the OTHER type of enzyme – Diastatic – works on starches, but the the root of the word "Diastatic" ("Dia-") should remind you that it has two components, Beta and Alpha. Beta-Amylase enzymes are activated first in the temperature scale – in the lower range, and Alpha-Amylase is activated second – at the higher range. You could remember "Alpha" as in "Alpha-male" – the TOP of the temperature range. Note that the two ranges overlap at 149-150F, so to take advantage of BOTH the Beta and Alpha Amylase enzymes, choose that temperature for your Saccharification rest.



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**T.13. Explain what happens during the mashing process, including times and temperatures as appropriate. Describe three different mashing techniques and the advantages and disadvantages of each. Address the following topics:**

10 points	Explain what happens in the mashing process, including times and temperatures as appropriate.
6 points	Identify and describe three mashing techniques.
4 points	Describe the advantages and disadvantages of each.

**A. Explain what happens during the mashing process, including times and temperatures as appropriate.**

Mashing Step	Temperature	Time	Active Enzymes	Description
<b>Milling Grain</b>	n/a	n/a	n/a	* Crushing grain kernels to expose starches
<b>Dough-in</b>	10-15F higher than first rest to raise grain temperature	n/a	n/a	* Mixing grist with water * 1.3 qts per pound of grist * Break all clumps so no dry grist remains
<b>Acid Rest</b>	95-120F	60-120 min	* Phytase * Beta Glucanase	* For under-modified malt only * Lowers mash PH when using low calcium brewing liquor * Breaks down phytin into calcium- and magnesium-phosphate and phytic acid * Breaks down hemicellulose and gums in the cell walls
<b>Protein Rest</b>	113-127F	15-60 min	* Proteinase * Peptidase	* Proteolytic enzymes * Breaks down proteins into smaller fractions such as polypeptides * Breaks down polypeptides into peptides and amino acids, essential for proper yeast growth and development
<b>Saccharification</b>	See descriptions for Beta and Alpha Amylase enzymes			* Breaks down starches into dextrins and fermentable sugars <b>Produces:</b> * Monosaccharides: Glucose, Fructose, Mannose, Galactose * Disaccharides: Maltose, Isomaltose, Fructose, Melibiose, Lactose * Trisaccharides: Maltotriose * Oligosaccharides: “dextrins” – glucose chains
<b>Saccharification – Beta Amylase</b>	130-150F	15-90 min	* Beta Amylase	* Subset of Diastatic enzymes * Yields wort very low in dextrins, high in fermentables * M.A.L.T. – More Alcohol, Lower Temperature * Breaks off maltose units from

				reducing ends of starches
<b>Saccharification – Alpha Amylase</b>	149-158F	15-30 min	* Alpha Amylase	* Subset of Diastatic enzymes * Wort high in dextrans, low in fermentables * Breaks 1-4 links from starches at random
<b>Mash-Out</b>	168-172F	5-15 min	n/a	* Denatures enzymes, stops conversion * Reduces viscosity, aids run-off of mash

**B. Describe three different mashing techniques and the advantages and disadvantages of each.**

<b>Mash-Type</b>	<b>Describe</b>	<b>Advantages</b>	<b>Disadvantages</b>
<b>Infusion Mash</b>	* Mixing grain with a single temperature of water and resting at that temp for the entire mash	* Requires minimum of labor, equipment, energy and time	* Prohibits the use of under modified malt or adjuncts
<b>Step Mash</b>	* Mashing in with a low temp of water * Raising mash temps to achieve conversion goals * Temp raised by adding boiling water or direct heat	* Allows flexibility in use of different temp steps * Under modified malts may be used.	* Requires more resources (labor, time, equipment)
<b>Decoction Mash</b>	* Removal of a thick third of mash * Raise to brief saccharification rest * Boil for 15-30 minutes * Mixing it back into the main mash * Repeat up to 3 times to reach beta amylase, alpha amylase, and mash-out temps	* Explode starch granules * Breaks down the protein matrix in under modified malt * Improves extraction efficiency * Promotes the formation of melanoidins.	* Most resource intensive (time, labor, equipment) * May extract higher levels of tannins and DMS precursors from grain husks
<b>Cereal Mash (Double Mash)</b>	* Two separate mashes: main mash is crushed malt, cereal mash is raw adjuncts and a bit of crushed malt * Boiled for 1+ hours to gelatinize the starches * Added to main mash, which has undergone an acid rest	* Allows use of adjuncts as alternate source of sugar	* Needs to be boiled or hot-flaked before adding to mash * Time and resource intensive

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**T.14. Provide a complete ALL-GRAIN recipe for a \_\_\_\_\_,**

This is **NOT** the best demo for how to create a recipe. The purpose of this demo is how to get the best score on the Recipe Creation question on the BJCP Exam. First, let's look at the question:

2 points	Target statistics ( <u>starting specific gravity</u> , <u>final specific gravity</u> , and bitterness in <u>IBUs</u> or <u>HBUs</u> ) and <u>color</u> (as SRM or a textual description of the color)
4 points	<u>Batch size</u> , ingredients ( <u>grist</u> , <u>hops</u> , <u>water</u> , and <u>yeast</u> ) and their <u>quantities</u>
7 points	<u>Mashing</u> , <u>boil</u> , <u>fermentation</u> , <u>packaging</u> , and other relevant brewing procedures
7 points	Explain how the recipe fits the style's characteristics for <u>aroma</u> , <u>appearance</u> , <u>flavor</u> , <u>mouthfeel</u> , and other significant aspects of the style; and describe <u>how the ingredients and processes used impact this style</u> .

The recipe creation question is worth 10 points of the total written part of the exam and is divided into four sections. Let's call them:

1. Statistics - 1 point maximum (4 items - 0.25 points each)
2. Ingredients - 2 points maximum (4 items - 0.5 points each)
3. Techniques - 3.5 points maximum (4 items - 0.875 points each)
4. Profile - 3.5 points maximum (5 items - 0.7 points each)

**Note:** You can get up to seven points on this question if you don't list any statistics or ingredients! (I'm not saying you shouldn't know statistics or ingredients – it's just an interesting point.)

When you read the question, take a minute to underline all of the items the question is asking for (as I have done in the question above). Before answering the question, if you take a moment to organize the task by making a form (like the form on Section 2 – Number 2 in the appendix), then your work is cut out for you. Just fill in the blanks. Just **WHAT** to put in the blanks is another story.... In this discussion I will number each item by the number it is given in the form in the appendix.

One more thing which will prove useful - here's a table of commonly tested beers. I have "dumbed it down" by looking for average common statistics amongst the styles. The exceptions have been shaded.

STYLE	OG	FG	IBU	SRM/COLOR
American IPA	<b>1075</b>	1010	40	6
Belgian Tripel	<b>1075</b>	1010	<b>25</b>	6
Doppelbock	<b>1075</b>	<b>1016</b>	<b>25</b>	6
Bohemian Pilsner	1050	<b>1016</b>	40	6
Robust Porter	1050	<b>1016</b>	40	<b>25</b>
Oktoberfest	1050	<b>1016</b>	<b>25</b>	<b>7</b>
Dry Stout	1050	1010	40	<b>25</b>
German Pilsner	1050	1010	40	<b>5</b>
Classic American Pilsner	1050	1010	40	6
English Pale Ale	1050	1010	40	6
Weizen/Weissbier	1050	1010	<b>10</b>	6

1. **OG** – Original Gravity. 1.050 is OK for most beers that are commonly used for this question (not IPA, Tripel or Doppelbock – they are 1075.) These are defined by the style; they just have to be memorized. Just write down 1050 or 1075!

2. **FG** – Final Gravity. 1.010 is OK for most beers, except for Bohemian Pilsner, Doppelbock, Robust Porter and Oktoberfest – use 1.016 for them. (Think: “sweeter beers”)

**CALCULATING FINAL GRAVITY:**

*NOTE: You don't need to know the stuff in this box for the test. This is just to explain why we're using 1010 and 1016*

Final gravity is determined by several things, but key amongst them is yeast attenuation. This means how much of the sugar in the beer will the yeast consume, and they differ a bit from one variety of yeast to another. The average attenuation rate of most yeast, however, is 75%. If you have a starting gravity of 1.050 (really, 1.050 – just think “50”) and take 75% of that

$$50 \times .75 = 37.5$$

$$50 - 37.5 = 12.5 \text{ is the gravity of what remains. } 1.0125 \text{ is your final gravity}$$

1.010 is the low end of the scale by the guidelines, and it happens to be the number that is common to most of these styles, and is easier to remember.

3. **IBUs** – “International Bittering Units” - shorthand for “How bitter do you want your beer?” 40 IBUs will work for most of the commonly tested beers. The Tripel, Doppelbock, and Oktoberfest need 25 IBUs, the Weissbier only needs 10. IBUs, like Original Gravity, is a characteristic of the style, and must just be memorized.
4. **SRM** – “Standard Reference Method” - shorthand for “Color”.  
5 SRM will work for German Pilsner (“Pale Straw”).  
6 SRM will work for most of the commonly tested beers. (Think “Pale Gold”).  
7 SRM will work for Oktoberfest (Think “Yellow”).  
25 SRM will work for Dry Stout and Robust Porter (Think “Dark Brown”).  
Why not 6 for German Pilsner and Oktoberfest? That would be just too easy then, wouldn't it?
5. **BATCH SIZE** – 5 Gallons. You could pick any number you want for this, as long as you list something. But 5 gallons makes the rest of this demo work – so USE FIVE GALLONS!
6. **GRIST** – first. Start with EFFICIENCY – an easy one – always 75%. Why?  
Because you're going to use 10 pounds of grain (except for the IPA, the Tripel, and the Doppelbock – those use 15 lbs.) Why 10 lbs? Because....

**CALCULATING ORIGINAL GRAVITY:**

*NOTE: You don't need to know the stuff in this box for the test. This is just to explain why we're using an efficiency of 75% and 10 lbs of grain.*

There is a fancy formula for figuring out your potential original gravity. It relies on your knowing the extraction rates for different types of grain. Sugar itself yields 46 gravity points. Base malt yields 33. There are others, but that's going to be close enough for our purposes.

- 10 pounds of grain times 33 points per pound equals 330 points.
- We divide 330 points by the total gallons (5, remember?)
- $330 / 5 = 66$  (or an original gravity of 1.066).
- But 66 is our MAXIMUM potential. We're only getting 75% efficiency, remember?
- $75\% \times 66 = 49.5$ ... round up to 50 – or an OG of 1050.

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THAT'S why we always say 75% efficiency!

- Keep the actual grain bill VERY simple!
- Forget “special ingredients” for the purposes of the test.
- Use malts from the country of origin of the beer.
- If you don't know malts from that country, remember most beers will start with “pale malt”.

Here are the grain bills for the most commonly tested styles.

STYLE	GRIST
American IPA	2-Row 80%, Crystal 20L 15%, Crystal 60L 5%
Belgian Tripel	Pilsner Malt 80%, White Sugar 20%
Doppelbock	Munich 75%, Vienna 25%
Bohemian Pilsner	100% Moravian Pilsner
Robust Porter	Maris Otter 85%, Roast 5%, Black 5%, Chocolate 5%
Oktoberfest	Vienna 50%, Pils 40%, Munich 5%, Crystal 15L 5%
Dry Stout	Maris Otter 65%, Roast Unmalted Barley 8%, Flaked Unmalted Barley 20%, Black 7%
German Pilsner	Pilsner 100%
Classic American Pilsner	6-Row 70%, Flaked Maize 30%
English Pale Ale	Maris Otter 90%, Crystal 60L 10%
Weizen/Weissbier	Wheat 70%, Pilsner 30%

Now, just multiply the percentage listed by 10 lbs (we always use ten pounds, remember, except for 15 lbs for IPAs, Tripels and Doppelbocks) and you have your quantity!

### 7. HOPS

- Always 5% Alpha Acid (AA), regardless of what hops you choose (see box below)
- Stick to Bittering, Flavor, and Aroma additions for the purposes of the test
- Ignore Mash hop, First Wort Hop and Dry hop techniques for the purposes of the test
- Mention “Assumed Utilization Rates” - 25% Bittering, 5% Flavor, 0% Aroma

#### IN GENERAL

##### **TYPE:**

Use hops from the country of origin for the beer:

COUNTRY OF ORIGIN	HOP VARIETIES
England	UK hops (East Kent Goldings, Fuggles)
Germany	Noble Hops (Hallertauer, Spalt, Tettnanger)
Czechoslovakia	Saaz
USA	Pacific Northwest “C” Hops (Centennial, Chinook, Cascade)
Belgium	Styrian Goldings

##### **HOW MUCH:**

Use 2 oz BITTERING hops for 40 IBUs

Use 1 oz BITTERING hops for 25 IBUs

Use 0.5 oz BITTERING hops for 10 IBUs

Use one-half to one ounce of flavor and/or aroma hops – if a beer is supposed to have hop flavor or aroma. They're FREE (Utilization-wise)!

**CALCULATING HOP AMOUNTS:**

*NOTE: You don't need to know the stuff in this box for the test. This is just to explain why we're using a utilization of 25% and AA% of 5%*

There is a fancy formula for figuring out the weight of your hops. It relies on your knowing your target IBUs:

- For beers commonly tested, usually 40, sometimes 25, rarely 10)
- The volume of your beer (always 5)
- Your alpha acid (always 5%)
- Your utilization (bittering always 25% - since flavor is only 5% and aroma is 0%, we're not going to bother with them.)

The formula is:

**Weight= IBU \* V(Gallons) / (AA% \* 7490 \* Utilization)**

Why 7490? Because this formula was originally figured out in all METRIC units, and 7490 covers the conversion. Skip that unless you're going for the MASTER score!

So to figure out how much BITTERING hops to use for 40 IBUs:

40 IBUs x 5 Gallons / (.05 AA% x 7490 x .25 Utilization)  
 200 / 93.626  
 2.13 oz (round down to 2 oz. for memorization sake)

Based on these GENERALITIES, here are some potential hop bills for the commonly tested styles:

STYLE	BITTERING HOPS	FLAVOR HOPS	AROMA HOPS
American IPA	2 oz Centennial	1 oz Cascade	1 oz Cascade
Belgian Tripel	1 oz Styrian Goldings	1 oz Styrian Goldings	
Doppelbock	1 oz Hallertauer	0.5 oz Tettnanger	
Bohemian Pilsner	2 oz Saaz	1 oz Saaz	
Robust Porter	2 oz East Kent Goldings	1 oz Fuggles	
Oktoberfest	1 oz Hallertauer	1 oz Hallertauer	
Dry Stout	2 oz East Kent Goldings	1 oz Fuggles	1 oz Fuggles
German Pilsner	2 oz Hallertauer	1 oz Hallertauer	1 oz Hallertauer
Classic American Pilsner	2 oz Hallertauer	1 oz Hallertauer	
English Pale Ale	2 oz East Kent Goldings	1 oz Fuggles	1 oz Fuggles
Weizen/Weissbier	0.5 oz Hallertauer		

8. **WATER** – Always:

9 total gallons of water

3.5 gallons of strike water at 163F for a mash temperature of 150F

5.5 gallons of sparge water at 168F, acidified with 1 tsp phosphoric acid.

...**UNLESS**, you're doing an IPA, Tripel or Doppelbock. Then use 1.5 times these amounts

Why?....

**CALCULATING WATER VOLUMES AND TEMPERATURES:**

*NOTE: You don't need to know the stuff in this box for the test. This is just to explain how we're getting the water volumes and temperatures.*

**VOLUMES OF WATER:**

There is a fancy formula for figuring out how much water you need for mashing and sparging. It relies on your knowing:

- The amount of grain you'll be mashing (always 10 lbs)
- The target volume of your batch (always 5 gallons)

**THE FORMULA FOR MASH WATER VOLUME:**

Volume= Weight x 1.25 quarts

**THE FORMULA FOR TOTAL WATER VOLUME NEEDED:**

- (BatchVolume plus TrubVolume)
- divided by
- 1 minus (WortShrinkagePct divided by 100)
- divided by
- (1 minus (BoilTime times (BoiloffPct divided by100) ) )
- plus
- EquipmentLossVol
- plus (GrainVolume times AbsorptionRate)

You'll have to trust me on these numbers:

- BatchVolume = 5
- TrubVolume = .5
- WortShrinkagePct = 4
- Boil Time = 1
- BoilOffPct = 10
- EquipmentLossVol = 1
- GrainVolume = 10
- AbsorbtionRate = .13

Thanks to Brew365 for this formula! [http://www.brew365.com/mash\\_sparge\\_water\\_calculator.php](http://www.brew365.com/mash_sparge_water_calculator.php)

**FORMULA FOR SPARGE WATER VOLUME:**

Volume= Total Water needed – Mash Water

**TEMPERATURES OF WATER:**

There are two temperature ranges where a single infusion mash can convert starches in the grain to sugars: the Beta Amylase range (130-150F), and the Alpha Amylase range (149-158F). Mashing in the Beta Amylase range will convert more of the starches to sugar, and will produce thinner beers with more alcohol (use the mnemonic M.A.L.T. – More Alcohol, Lower Temperature.) Mashing in the higher, Alpha Amylase range will convert less of the starches to sugar, yielding sweeter beers with a

thicker body. We chose 150F for our mash temperature because it's at the point where the beta and alpha amylase temperature ranges overlap.

### **STRIKE TEMPERATURE FORMULA**

The formula for determining the "strike temperature" of water for a specified target temperature is as follows:

$$T_w = (0.2 \div R) \times (T_2 - T_1) + T_2$$

- T<sub>w</sub> = the actual temperature of the infusion water (what we're solving for...)
- R = the ratio of water to grain in quarts per pound (1.25)
- T<sub>1</sub> = the initial temperature of the mash (or dry grain) (70F – room temperature)
- T<sub>2</sub> = the target temperature of the mash (153F)

Using our weights and volumes, we get:

$$\begin{aligned} T_w &= (0.2 \div 1.25) \times (150 - 70) + 153F \\ T_w &= (0.16) \times (80) + 150F \\ T_w &= 12.8 + 150F \\ T_w &= 162.8F \text{ (rounded to 163F)} \end{aligned}$$

There is another formula for figuring out what temperature of water to ADD to a mash to get to the next temperature rest, but fortunately we're only doing a SINGLE INFUSION mash, so we don't need to know that....

What? You want to know it ANYWAY? (sigh...) OK, here it is...

### **INFUSION TEMPERATURE FORMULA:**

$$W_a = (T_2 - T_1) \times (0.2 \times G + W_m) \div (T_w - T_2)$$

We need a few new variables, in addition to the ones above

- W<sub>a</sub> = the amount of boiling water added in quarts (what we're solving for)
- W<sub>m</sub> = the total amount of water in the mash in quarts (1.25 qts/lb x 10 lbs grain)
- G = the amount of grain in the mash in pounds (10)

Let's say we want to have a MASH-OUT for our single-infusion mash at 168F (mash-outs are not necessary, and you won't lose points for not describing them.). 168F is the highest temperature you can use without the risk of extracting tannins. We need to figure out how much boiling water to add to get the mash temperature to 168F. Our formula is:

$$\begin{aligned} W_a &= (T_2 - T_1) \times (0.2 \times G + W_m) \div (T_w - T_2) \\ W_a &= (168 - 150) \times (0.2 \times 10 + (1.25 \times 10)) \div (212 - 168) \\ W_a &= 18 \times (2 + 12.5) \div (44) \\ W_a &= (18 \times 14.5) \div (44) \\ W_a &= 261 \div 44 \\ W_a &= 5.93 \text{ quarts} \end{aligned}$$



## THE BJCP EXAM FOR DUMMIES 2013

### 9. YEAST

Remember three things:

- Ale or Lager,
- Country of origin
- “Create a 1 quart starter”

If you can't think of a specific yeast name, just say [Country] [Type]... i.e. “German Lager”.  
This question should be a gimme - every yeast will get the job done! :-D

STYLE	BEER TYPE	COUNTRY	YEAST
American IPA	Ale	America	American Ale
Belgian Tripel	Ale	Belgium	Trappist HighGravity
Doppelbock	Lager	Germany	Bavarian Lager
Bohemian Pilsner	Lager	Czechoslovakia	Budjevoice Lager
Robust Porter	Ale	England	London Ale III
Oktoberfest	Lager	Germany	Munich Lager
Dry Stout	Ale	Ireland	Irish Ale
German Pilsner	Lager	Germany	German Lager
Classic American Pilsner	Lager	America	Budjevoice Lager
English Pale Ale	Ale	England	London Ale
Weizen/Weissbier	Ale	Germany	Weihenstephan Ale

### 10. MASH

**Techniques:** (choose one)  
 Single Infusion  
 Multi-Step  
 Decoction  
 Double Mash (also called a Cereal Mash)

**Rests:**  
 Acid Rest (95-120F – 60-120 minutes)  
 Protein Rest (122F – 20 min)  
 Beta Amylase Saccharification Rest (130-150F – 30 min)  
 Alpha Amylase Saccharification Rest (149-158F)  
 Mash-Out (168F 15 min)

**Vorlauf (recirculate.):** 30 minutes

**Sparge/Lauter:** 168F, 5.5 gallons, 45 minutes

**BIG HINT:** ALL of these styles can be made with a Single-Infusion mash! But to get all the points, you need to say:

“The CLASSIC mash style used for this beer would be the \_\_\_\_ mash technique, but due to the highly modified malts available today, I'll use the Single Infusion mash.” (*NOTE: There are some styles such as Doppelbock where a decoction mash can significantly enhance the flavor and aroma profile, and some graders may not award all possible points without a description of the decoction.*)

If you DO decide to use one of the other mash types, be SURE to detail all the steps!

STYLE	CLASSIC MASH TYPE
American IPA	Multi-Step
Belgian Tripel	Multi-Step
Doppelbock	Decoction
Bohemian Pilsner	Decoction
Robust Porter	Single Infusion
Oktoberfest	Decoction
Dry Stout	Single Infusion
German Pilsner	Decoction
Classic American Pilsner	Double-Mash (Cereal)
English Pale Ale	Multi-Step
Weizen/Weissbier	Decoction

## 11. BOIL/CHILL

**Boil: ALWAYS:** “75 minutes, full rolling boil to facilitate hot break, adding hops according to schedule above.

**Finings:** Irish Moss, added at 5 minutes before the end of the boil.

**Chill:** Counter-flow method, to facilitate cold break, to 70F prior to pitching yeast (cooler temperatures for lagers.)”

**EXCEPT FOR:** Weizen – state “NO FININGS due to desired cloudiness in finished beer.”

## 12. FERMENTATION: Ales or Lagers (see yeast chart above)

### Ales:

Primary: 68F for 7 days

Secondary: 68F for 21 days

### Lagers:

Primary: 55F for 14 days

Diacetyl Rest: 65F for 2 days

Secondary: 32F for 60 days

## 13. PACKAGING

Always: Bottle condition: ¾ cup of corn sugar at bottling.

(Using kegging requires knowing the pressures of the various beers – you already have enough to remember!)

For the next four points, read and use the “helper words” from the beer score sheet. (They are on the “Classic Example” score sheet for Question #9.) Say something on each of these attributes. If it DOESN’T have that characteristic – SAY SO! (i.e. – “No alcohol warmth.”)

## 14. AROMA

Comment on malt aroma, hop aroma, esters, and other aromatics

## 15. APPEARANCE

Comment on color, clarity, and head retention, head color, and head texture

## 16. FLAVOR

Comment on malt flavor, malt sweetness or dryness, hop flavor, hop bitterness, fermentation

## **THE BJCP EXAM FOR DUMMIES 2013**

Characteristics (esters/phenols), balance between sweetness and hop bitterness, finish/aftertaste, and other flavor characteristics

### **17. MOUTHFEEL**

Comment on body, carbonation, alcohol warmth, creaminess, astringency, and other palate sensations

### **18. HOW INGREDIENTS/PROCEDURES IMPACT THE STYLE?**

Easy way: “The malt, hops, and yeast used in this recipe work together to produce the aroma, appearance, flavor and mouthfeel representative of a \_\_\_\_\_ style.” If you’ve got LOTS of time at the END of the test, come back to this part and elaborate more, if you know it.

See the appendix for a sample “grid” with which to answer this question.

# BJCP TASTE EXAM

6 beers (worth 50% of your total score)

## ***THE SCORESHEET – THE SECTIONS YOU WRITE FOR EACH BEER***

The first four sections on the score sheet (aroma, appearance, flavor and mouthfeel) are objective! What do you sense? Don't write about how to improve these sensations in the first four sections. Save those for "Overall". Comment on each "key word" beneath each section of the score sheet. (Some people even make a little check mark on the key word after they've commented on it. This also telegraphs to the grader: "Look, see? I talked about this aspect of the beer!")

1. **AROMA** - *Key Words:* Malt, hops, esters, and other aromatics
2. **APPEARANCE** - *Key Words:* Color, clarity, head retention, head color, and head texture
3. **FLAVOR** - *Key Words:* Malt, hops, fermentation characteristics, balance, finish/aftertaste, and other flavor characteristics
4. **MOUTHFEEL** - *Key Words:* Body, carbonation, warmth, creaminess, astringency, and other palate sensations

The fifth section is subjective. How did you enjoy the beer? How could the brewer improve the beer, the recipe and/or the process?

5. **OVERALL** - Overall drinking pleasure associated with entry, give suggestions for improvement

## ***HOW THE GRADERS GRADE THE TASTE SECTION***

The graders score the TASTE section on 5 segments - each beer gets 20 points for each segment, for each beer, totaling 100 points per beer.

1. **SCORE:** How close did your score for the beers get to the consensus proctor scores?
2. **PERCEPTION:** How closely did your descriptions of the beers match those of the proctors? Did you identify the primary characteristics?
3. **DESCRIPTION:** Were your comments colorful and evocative?
4. **FEEDBACK:** Did you describe how you enjoyed the beer? Did you give 2-3 specific suggestions for improvement?
5. **COMPLETENESS:** Did you avoid leaving white space? Did you comment on all sub-key words under all sensory components? Did you fill out the style grid? Did you total your score accurately?

The first two segments, SCORE and PERCEPTION, are dependent on how the proctors scored and perceived the beer.

The last 3 segments, DESCRIPTION, FEEDBACK, and COMPLETENESS are all dependent on you - as long as they're all consistent to each other and all thorough, you should be able to get the maximum points independent of the proctors score sheets.

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### A. SCORE

(20 points total – based on absolute difference in scores for all four beers)

For SCORE, graders take the absolute difference between your score and the proctors score on each beer, total them, then compare them to the Score matrix: i.e.

	<b>Proctors' Consensus</b>	<b>Your Score</b>	<b>Absolute Difference</b>
<b>Beer 1</b>	43	38	5
<b>Beer 2</b>	33	35	2
<b>Beer 3</b>	13	15	2
<b>Beer 4</b>	27	25	2
		<b>TOTAL</b>	11

<b>Variance from Proctors</b>	<b>Points</b>	<b>Variance from Proctors</b>	<b>Points</b>
0-4	20	19-22	14
5-8	19	23-26	13
<b>9-12</b>	<b>18</b>	27-30	12
13-14	17	31-35	11
15-16	16	36-40	10
17-18	15	>40	9

In the case above, the total absolute difference was between 9-12, so you would get 18 points for the SCORING portion of the Taste exam. (NOTE: you CAN'T get any fewer than 9 points on the Score section, no matter HOW far off you were from the proctors' scores.

- Think of all the "Calibration Beers" you've ever judged.
- Do you usually judge higher or lower than everyone else?
- Do you have a fondness or dislike for some styles that consistently make you judge them either high or low? If so, score the beers normally, then knock off or add a point or two, per your calibration experiences.

Want to play the averages? (Risky.... use at your own peril!)

- It's considered poor taste to judge a beer below 13, and most people will give no higher than a 45.
- That gives you a 32 point range, not a 50 point range ( $45 - 13 = 32$ ).
- The midpoint between 13 and 45 is 29. ( $32 / 2 = 16$ ,  $13 + 16 = 29$ ) Most judges don't sway too far from this.
- IF (and I say IF) a beer on the exam is really poor, give it a 13. Done deal. (One beer in the exam set is supposed to be flawed.)
- If a beer is nearly average, give it near a 29.

Even more risky business... exam administrators are instructed to offer the following beer examples:

- As near as possible to a flawless, "Classic Example" (mid to high 40's score)
- A badly flawed beer (13-20 score)
- A middle-range beer (27-34 score)
- A beer that has a perceptible flavor or aroma component (depends on whether the characteristic is appropriate for the style or not)

If you think you recognize which beer fits which category, and if you think your exam administrator has properly followed directions, then you can set your score based on these hunches. (I told you it was risky!)

## B. PERCEPTION

(120 points total - 20 points per beer)

- Did you get the same characteristics in the beer as the proctors and the rest of the examinees?
- Write what you see, hear, smell, taste, and feel.
- Write every little thing – however slight it was.
- Write what wasn't perceived as well as what was perceived, especially for the “key words.” (i.e., “No hop aroma”, “No astringency”, etc.)
- Use as many colorful, descriptive words as you can muster. The more you write, the more likely you'll match some of the perceptions of the proctors
- Use real descriptors - i.e. "Dark Brown to Ruby" instead of "Dark", "Head pours full, gradually dissipates" instead of "Good head"
- There's an element of luck here, as you're trying to match what the proctors perceive.
- Risky Tip: If you know the proctors, recall other judging experiences you've had with them. For example, if you know that a specific judge picks up diacetyl at 0.005 parts per million, be sure to mention Diacetyl in your descriptions....

## C. DESCRIPTIVE ABILITY

(120 points total – 20 points per beer)

- Talk about EACH element of the beer: Malt, Water, Yeast, and Hops (bittering, flavor and aroma) in each section where it's appropriate, as well as the balance between them.
- Don't forget: hops have three purposes: Bitterness, Flavor and Aroma - talk about each!
- It's useful to talk about the lack of a descriptor also (i.e., “No floral hop aroma” for a Bohemian pilsner would be an objective, and telling statement)
- Throw in a couple of factoids that show you understand what that world-beer style is supposed to taste like (i.e., in the Overall section, write "Try adding some Lyle's Golden Syrup to create the toffee-like character normally found in an English Bitter...), etc.
- Avoid words like "Nice", "Good", "Appropriate to Style"
- Use instead colorful, evocative language, i.e. "Tan to Brown head, thick and moussy, tiny bubbles, very slowly dissipates to a fine film on the surface"
- Don't forget to comment on sweet-bitter balance
- Use **DESCRIPTIVE**, colorful words for sensations: color, viscosity, smell, taste, feel. NOT: “Nice”, “Good” or “Appropriate to Style”
- Quantify the intensity of the flavor component, ie. “low”, “medium”, or “high.”

IE:

**APPEARANCE:** instead of “Nice Head”...

Huge, creamy tan to brown head, tiny bubbles, dissipates gradually. Lace clings to the side of glass. Garnet to Black color, almost opaque. Brilliantly clear.

**AROMA:** instead of “Good Aroma”...

Bready malt aroma, fruity raisin notes. Spicy hop nose lingers. Some alcohol scent.

**FLAVOR:** instead of “Great Flavor”...

Rich chocolate and roast malt flavor, with dark fruit overtones. Hop flavor subdued with faint citrus notes, but firm hop bitterness provides balance for huge malt bill, towards the malt side. Slightly medicinal, “Chloraseptic”-like taste very slight, in background.

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**MOUTHFEEL:** instead of “Big Body”...

Thick, chewy body, like a loaf of rye bread in a glass. Creamy, not oily sensation going down. Alcoholic warmth spreads like a fire in my belly. Some astringency, but the sensation is probably hop-based rather than tannin-based.

**OVERALL:** instead of “Good beer!”... (OK, but don't stop there!)

Good Beer! Chocolate and roast malt comes through strong; base malt provides a solid framework. Hop bitterness was to balance, but the use of citrus hops (Cascades?) is inappropriate for a Russian Imperial Stout. Use English flavor and finishing hops instead. Slight medicinal flavor may indicate sanitation or rinsing issue. If using bleach, be sure to RINSE WELL!

### D. FEEDBACK

(120 points total – 20 points per beer)

- Did you tell the brewer how you enjoyed their beer? (hint: use the score guidelines, and make sure your enjoyment word matches your score - i.e., Outstanding=45-50, Excellent=38-44, Very Good=30-37, Good=21-29, Fair=14-20, or Problematic=0-13)
- Did you give the brewer at least one specific suggestion to improve the beer? (Hint: You'd BETTER, unless you scored the beer a perfect 50!)
- The lower the score you gave, the more suggestions you should offer!
- Did you give at least 2-3 specific suggestions for improvement on each beer?
- Did you score the beer 13 or higher? (For the purposes of the test, DON'T give a beer below 13, no matter how bad it is!)
- Did you say something positive and encouraging?

### E. COMPLETENESS

(120 points total – 20 points per beer)

- Did you fill out all the sections?
- Was each section jam-packed with stuff?
- Did you fill out the Style Grid?
- Did you total your score correctly?
- Did you PRINT LEGIBLY??
- Did you PRINT? (Don't use cursive!)
- Did you leave any whitespace?
- Did you comment on all key-words beneath main sections?
- Did you total your scores accurately? (Simple calculators are ok to use on the test!)

It is important that you FINISH each of the six score sheets! Since this is a timed test, it means you must complete each score sheet in about 15 minutes – roughly the amount of time you'll have to judge a beer and fill out a score sheet in a competition scenario. USE A WATCH, and when 15 minutes goes by, move on to the next beer – or the next question on your test. If you have extra time at the end of the test, you may come back to the score sheets and add more to them.

PRACTICE THIS before undertaking the test! Time yourself as you fill out ten or twelve score sheets in your preparation for the test. Keep them, and compare your first one to your last one to check your improvement.





**THE BJCP EXAM FOR DUMMIES 2013**  
**APPENDIX – Sample Text Questions**

This section contains sample questions, and the blank grid in which you may write your answer. NOTE: The exam will NOT give you these grids! If you wish to use the grid and bullet system to structure your answers, you will have to create the grid yourself prior to writing your answers. If you have studied the BJCP EXAM FOR DUMMIES well, this should be second nature to you by now.

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## SECTION 1 (BJCP/ETHICS/JUDGING PROCESS)

### Part 2. Judging Process & Ethics

For the following 20 questions circle the “T” if the statement is true or circle the “F” if the statement is false. There are no points for these, but there is a 0.5 point deduction for each question unanswered or answered incorrectly, for a maximum of a 10 point deduction.

No.	Choice	Question
1	T / F	A competition organizer may serve as the judge director and may also serve as a judge provided this person has no knowledge of the association between entries and entrants.
2	T / F	A competition’s judge director may serve as a judge provided this person has no knowledge of the association between entries and entrants.
3	T / F	A competition organizer may serve as the judge director provided this person has no knowledge of the association between entries and entrants.
4	T / F	A competition’s judge director may not serve as a judge even if this person has no knowledge of the association between entries and entrants.
5	T / F	A competition organizer may not serve as a judge even if this person has no knowledge of the association between entries and entrants.
6	T / F	A competition’s judge director may serve as the competition organizer and may also serve as a judge provided this person has no knowledge of the association between entries and entrants.
7	T / F	An individual with knowledge of the association between entries and entrants may not serve as a judge.
8	T / F	A member of the competition staff with access to information that associates entries with entrants may serve as a judge provided this person has no knowledge of the association between entries and entrants.
9	T / F	The “head” judge at a table should try to tutor apprentice or lower-rank judges if time permits.
10	T / F	The steward at the table has sole responsibility for completing the Cover Sheets for beers in each flight.
11	T / F	The “head” judge at the table has sole responsibility for completing the Cover Sheets for beers in each flight.
12	T / F	The “head” judge at a table should fill out Cover Sheets for beers in his or her flight as directed by the competition management.
13	T / F	The “head” judge at a table has no responsibility for filling out Cover Sheets for beers in his or her flight unless directed to do so by the competition management.
14	T / F	The “head” judge at the table has sole responsibility for completing the Cover Sheets for beers in each flight but with the agreement of the steward may delegate the completion of the Cover Sheets to the steward.
15	T / F	The “head” judge with the agreement of the steward may delegate filling in of the Cover Sheets for beers in his or her flight to the steward.
16	T / F	There is no need for the “head” judge to complete the Flight Summary Sheet - the competition organizer can obtain all that information from the cover sheets. But the competition organizer can NOT receive judging experience points if they serve as a judge.

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17	T / F	If possible there should be at least one BJCP-ranked judge in every flight.
18	T / F	When Non-BJCP judges evaluate entries in a competition each Non-BJCP judge should be paired with a BJCP judge.
19	T / F	Non-BJCP judges may only evaluate entries if authorized by the judge director and Non-BJCP judges should be paired with BJCP judges when possible.
20	T / F	To reduce stray odors and flavors present beverages and foods other than water bread or crackers should not be brought to the judging table.
21	T / F	It is acceptable to bring food items other than bread crackers and water to the judging table.
22	T / F	You must filter out strong scents from fellow judges or the environment from your mind rather than discussing the problem with the competition organizer.
23	T / F	Strong scents from the environment or other judges or stewards should be brought to the attention of the competition organizer.
24	T / F	Because entries cannot have any identifying marks, it is OK for a judge to judge beers in a category he or she has entered.
25	T / F	If a judge is assigned to judge a category that he/she has entered, that judge should ask the competition organizer to reassign him/her to another category.
26	T / F	If a judge is assigned to a category that he or she has entered, the judge should go ahead and evaluate the entries in that category without notifying the judge director or competition organizer.
27	T / F	Judges should not review the style being judged from the BJCP Style Guidelines while at the judging table prior to judging that style.
28	T / F	Judges may invite stewards to taste the beers in a flight, if there's enough sample to share.
29	T / F	It is acceptable to change the order in which you judge the beers on your flight sheet from how it was printed.
30	T / F	Beers must be evaluated in the sequence specified on the flight sheet.
31	T / F	If you have eaten spicy or greasy food within a few hours prior to judging you should use mouthwash or antiseptic rinse before judging.
32	T / F	You should avoid eating spicy or greasy food within a few hours prior to judging.
33	T / F	Spicy or greasy foods should be avoided prior to a judging event because they can reduce a judge's sensitivity to the aromas and flavors of beer.
34	T / F	Perfumed shampoos and colognes should be avoided prior to a judging event because they can reduce a judge's sensitivity to the aromas of beer.
35	T / F	It is a good idea to take a decongestant prior to a judging event to increase your sensitivity to the aromas of beer.
36	T / F	Calibrations beers are selected to be the standard against which entries should be judged.
37	T / F	It is the responsibility of the "head" judge, in consultation with the other judges in a flight, to assign a consensus score to each entry.
38	T / F	It is not necessary for scores produced by the judges on a panel to be within seven points (or less if directed by the competition director) of each other.
39	T / F	After discussing the initial scores, judges should adjust their final scores to be within seven points (or less if directed by the competition director).
40	T / F	Judges must adjust their scores to be within seven points (or less if directed by the competition director) of each other as part of developing a consensus score for the beer.

41	T / F	The consensus score assigned to the beer is not necessarily an average score.
42	T / F	When judging, It is important to evaluate entries quickly and also complete the score sheets thoroughly and completely..
43	T / F	On average, experienced judges should be able to completely evaluate a beer, including arriving at a consensus, in 10 minutes.
44	T / F	When there is a discrepancy in the scores for a given beer, the lower-ranked judges should yield to the opinion of the highest ranked BJCP judge at the table.
45	T / F	It is acceptable to remove offensive smelling entries from the judging table after they have been evaluated.
46	T / F	A judge must disqualify an entry if the bottle has raised lettering or the cap has identifying marks.
47	T / F	A judge may disqualify an entry if it has an improper bottle or cap. 48 T Only the judge director or competition organizer can disqualify an entry.
49	T / F	The results of the bottle inspection does not affect the scoring.
50	T / F	Snide or rude comments are unacceptable on scoresheets.
51	T / F	Pour each entry in a manner that gives it its optimum appearance, keeping in mind that some entries may be over- or under-carbonated.
52	T / F	When you suspect an entry has been placed in the wrong flight based on the style being judged, you should request that it be judged in a different flight instead.
53	T / F	When you suspect an entry has been placed in the wrong flight based on the style being judged, you should consult with the judge director or competition organizer.
54	T / F	Sniff the entry immediately after pouring to ensure proper evaluation of volatile aromatics.
55	T / F	There is no need to sniff the aroma immediately after pouring the entry into the glass.
56	T / F	Judges should complete the evaluation of each entry before moving on to the next.
57	T / F	It is not necessary to offer any feedback for improvement if you score a beer above 40.
58	T / F	It is common practice to refrain from sharing your thoughts while judging a beer until the other judges have completed their scoresheet.
59	T / F	If you are very familiar with a beer style, it is preferable to disregard the BJCP Style Guidelines and rely on your personal expertise instead.
60	T / F	If rushed, it's acceptable to write only comments and an overall score on a scoresheet, leaving the scores for the subsections blank.
61	T / F	If rushed, it's acceptable to write only 1-2 comments on a scoresheet as long as the numeric score is filled out.
62	T / F	If a beer is a "gusher" or has an unpleasant aroma upon opening, a judge may assign a courtesy score of 13 without tasting and commenting on the characteristics of the beer.
63	T / F	All beers should be tasted and scored, even if they are "gushers" or have an unpleasant aroma upon opening.
64	T / F	It is appropriate to penalize the entrant if the beer is not served at the proper temperature.
65	T / F	If the beers are not served at the proper temperature, judges should work with the competition staff to resolve the problem.
66	T / F	In each section of a scoresheet, you should only comment upon the most prominent features of each entry, not subtle characteristics.
67	T / F	Judges' comments must not include phrases like "if you used .."

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68	T / F	Judges' comments must not include phrases like "did you .."
69	T / F	Judges' comments must include a complete evaluation of the sensory aspects of the entry and how those aspects relate to the style guidelines.
70	T / F	Judges' comments should be constructive and reflect knowledge of the brewing, fermentation, bottling, and handling process
71	T / F	Judges' comments need to provide information on how to improve the entry as warranted.
72	T / F	Scores should not be assigned to the aroma section immediately because the entry's aroma profile may change over time.
73	T / F	Each section must be scored with a number prior to writing any comments, to best capture your first impressions.
74	T / F	To assure objectivity, you should never write your full name or put contact information on the scoresheet.
75	T / F	You should write your full name and judging rank on each scoresheet.
76	T / F	You should always fill out the "Style Scales" on the scoresheet, as a good check against your scores.
77	T / F	You should use the "Overall Impression" section of the scoresheet to refer to how the entry compares to other entries in the flight.
78	T / F	You should use the "Overall Impression" section of the scoresheet to comment on how much you enjoyed the entry or provide suggestions for how to improve the beer.
79	T / F	A score in the "Outstanding" range is reserved for entries that not only lack flaws but also have the hard-to-define "extraordinary" character that great beers have.
80	T / F	The courteous lower limit for scores assigned to "Problematic" beers is 6 points, with one point for each section of the scoresheet.
81	T / F	The courteous lower limit for scores assigned to "Problematic" beers is 13 points.
82	T / F	If judges require more pours than one bottle to judge an entry, the "head" judge should ask the steward to request a second bottle from the cellar master.
83	T / F	It is preferable to use ink on scoresheets so that your scores and comments cannot be altered by contest personnel.
84	T / F	It is preferable to use mechanical pencils, rather than wooden pencils, on scoresheets so that wood odors do not interfere with beer aromas.
85	T / F	It is acceptable to request a second bottle to give the entry a fair chance at an accurate judging if a beer is a "gusher" or tastes infected.
86	T / F	Entrants may contact the judge, the competition director, or their BJCP Regional Representative if they are dissatisfied with any aspect of their scoresheets.
87	T / F	When your flight has finished, you should avoid having conversations that might distract other judges who have not yet finished their flights.
88	T / F	When your flight has finished, it is acceptable to visit other flights still in progress to see how beers you have entered are faring.
89	T / F	Because it may have been entered by a person in the room, it is polite to refrain from publicly deriding a "problem" beer that you have scored during a competition.
90	T / F	Judges from outside the table should not be consulted on a beer unless the judges at the table cannot reach a consensus score, and then only if they all agree to the consultation.
91	T / F	BJCP Apprentice judges have not yet taken the BJCP Beer Judging Exam.
92	T / F	Novice is not an official BJCP judge rank.
93	T / F	One can obtain the BJCP Recognized rank without acquiring judging experience points.

94	T / F	One can obtain the BJCP Recognized rank without acquiring non-judging experience points.
95	T / F	To become a BJCP Certified judge, it is sufficient to pass the Entrance Exam, score at least 70% on the Beer Judging Exam and earn 5 judging points.
96	T / F	To become a BJCP Certified judge, it is sufficient to pass the Entrance Exam, score at least 70% on the Beer Judging Exam and earn 5 experience points.
97	T / F	The maximum score on the Beer Judging Exam for the BJCP Certified rank is 79%.
98	T / F	To become a BJCP National judge, it is sufficient to score 80% on the Beer Judging Exam and accumulate 20 experience points.
99	T / F	To become a BJCP National judge, it is sufficient to score 80% on the Beer Judging Exam and accumulate 20 experience points, with at least half of them from judging.
100	T / F	One can obtain the BJCP National rank without acquiring judging experience points.
101	T / F	One can obtain the BJCP National rank without acquiring non-judging experience points.
102	T / F	BJCP Master judges must have a minimum score of 90% on the combined written and tasting exams and at least 40 judging points.
103	T / F	BJCP Master judges must score at least 90% on the combined written and tasting exams and earn at least 50 experience points, with at least half of them from judging.
104	T / F	The maximum score on the combined written and tasting exams for the BJCP National rank is 89%.
105	T / F	BJCP Master judges must score at least 90% on the combined written and tasting exams and fulfill a Grand Master Service Requirement.
106	T / F	BJCP Grand Master judges must score at least 95% on the combined written and tasting exams.
107	T / F	BJCP Grand Master judges must score at least 90% on the combined written and tasting exams.
108	T / F	Each additional BJCP Grand Master level requires an additional 100 experience points.
109	T / F	BJCP Honorary Grand Master judges do not have to take the BJCP exam.
110	T / F	The BJCP Honorary Grand Master rank is bestowed upon professional brewers when they judge at homebrew competitions.
111	T / F	Honorary Master is a temporary rank bestowed on operatives of the BJCP.
112	T / F	The BJCP Grand Master rank requires the same minimum score on the combined written and tasting exams as the Master rank.
113	T / F	The BJCP Grand Master rank requires the same minimum experience points as the Master rank.
114	T / F	The only difference in requirements between the BJCP Master and Grand Master ranks is that the Grand Master rank requires a GMSR.
115	T / F	Each BJCP Grand Master level has additional requirements for exam grading.
116	T / F	A BJCP Grand Master Service Requirement can be fulfilled by grading exams.
117	T / F	A BJCP Grand Master Service Requirement can be fulfilled by organizing competitions.
118	T / F	A BJCP Grand Master Service Requirement can be fulfilled just by serving on the BJCP Board.
119	T / F	At least one-half of the experience points required for any BJCP judge rank must be from judging.
120	T / F	Judging at homebrew competitions is the only way to earn BJCP judging points.

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121	T / F	BJCP judges can earn non-judging experience points for participating in BJCP Continuing Education Program activities.
122	T / F	Judging experience points can only be earned by judging in a competition or proctoring a BJCP exam.
123	T / F	Stewards at homebrew competitions earn BJCP judging points if they taste the beers with the judges.
124	T / F	Stewards at homebrew competitions earn BJCP experience points.

## SECTION 2 (STYLES/BREWING TECHNIQUES)

S.0. For each of the three styles [A, B, and C] provide a statement describing the styles as well as the difference and similarities between the styles by addressing each of the following topics:

1.

8 points	Describe the aroma, appearance, flavor and mouthfeel of each sub-style as in the BJCP Style Guidelines.
5 points	Identify at least one aspect of the ingredients (malts, hops, water chemistry) or background information (history, fermentation techniques and conditions, or serving methods) that distinguishes each style.
2 points	For each of the styles name at least one classic commercial example as listed in the BJCP Style Guidelines.
5 points	Describe the similarities and differences between the three styles

<b>STYLE</b>			
<b>AROMA</b>			
<b>APPEARANCE</b>			
<b>FLAVOR</b>			
<b>MOUTHFEEL</b>			
<b>DISTINGUISH</b>			
<b>COMMERCIAL</b>			
<b>SIMILARITIES</b>			
<b>DIFFERENCES</b>			



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**T.1. Describe and discuss the following beer characteristics. What causes them and how are they avoided and controlled? Are they ever appropriate, and if so, in what beer styles?**

6 points	Describe each characteristic and how it is perceived.
8 points	Identify the causes and controls for each characteristic.
6 points	Identify appropriate/inappropriate styles.

	<b>1.</b>	<b>2.</b>	<b>3.</b>
<b>Describe/Discuss</b>			
<b>How caused?</b>			
<b>How avoided/ controlled?</b>			
<b>Ever Appropriate?</b>			
<b>If so, which Style?</b>			

**T.3. What are body and mouthfeel?**

Explain how the brewer controls body and mouthfeel in his/her beer? Cover the following topics:

10 points	Describe Body and Mouthfeel.
10 points	Explain how the brewer controls body and Mouthfeel.

	<b>Describe</b>	<b>Causes and Controls</b>
<b>BODY</b>		
<b>MOUTHFEEL</b>		

**THE BJCP EXAM FOR DUMMIES 2013**

**T.4. Discuss hops, describing their characteristics, how these characteristics are extracted, and at least four distinct beer styles with which the different varieties are normally associated. Address the following topics:**

6 points	Describe hop characteristics.
6 points	Discuss how hop characteristics are extracted.
8 points	Identify associated beer styles.

**Discuss hops:**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Hop Characteristics	How these characteristics are extracted

Hop Variety	Country	Characteristics	Associated Style

**T.8. Discuss the importance of water characteristics in the brewing process and how water has played a role in the development of at least four distinct world beer styles. Address the following topics:**

10 points	Describe the importance of water characteristics in the brewing process.
10 points	Describe the role in the development of at least four beer styles.

**WATER TREATMENT METHODS**

Method	Importance

**pH (Power of Hydrogen):**

WATER TYPE	pH

**BEER STYLES**

CITY	BEER STYLE	IMPORTANCE OF WATER

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**T.9. Describe the brewing techniques. A) *Kräuesening* B) *Adding Gypsum* C) *Fining*. How do they affect the beer?**

10 points	Discuss each characteristic.
10 points	Identify their effect on the finished beer.

	<b>Describe</b>	<b>Effect on Beer</b>
<b>Kräuesening</b>		
<b>Adding Gypsum</b>		
<b>Fining</b>		

**T.10. What is meant by the terms "hot break" and "cold break"? What is happening and why are they important in brewing and the quality of the finished beer? Address the following topics:**

6 points	Describe each term.
6 points	Identify what is happening.
8 points	Describe why they are important in brewing and the quality of the finished beer.

	<b>Describe</b>	<b>What's happening?</b>	<b>Why important in brewing and beer quality?</b>
<b>Hot Break</b>			
<b>Cold Break</b>			

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**T.11. Describe and explain the role of diastatic and proteolytic enzymes in the brewing process and how they affect the characteristics of the finished beer. Address the following topics:**

10 points	Describe and explain the role of diastatic and proteolytic enzymes in the brewing process
10 points	Describe how they affect the finished beer.

	<b>Proteolytic</b>	<b>Diastatic</b>	
<b>Works on</b>			
<b>Subset</b>			
<b>Temperature</b>			
<b>Describe/Explain</b>			
<b>Effect on Beer</b>			

**T.13. Explain what happens during the mashing process, including times and temperatures as appropriate. Describe three different mashing techniques and the advantages and disadvantages of each. Address the following topics:**

10 points	Explain what happens in the mashing process, including times and temperatures as appropriate.
6 points	Identify and describe three mashing techniques.
4 points	Describe the advantages and disadvantages of each.

**A. Explain what happens during the mashing process, including times and temperatures as appropriate.**

Mashing Step	Temperature	Time	Active Enzymes	Description

**B. Describe three different mashing techniques and the advantages and disadvantages of each.**

Mash-Type	Describe	Advantages	Disadvantages



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**T.14. Provide a complete ALL-GRAIN recipe for a \_\_\_\_\_, including**

2 points	Target statistics ( <u>starting specific gravity</u> , <u>final specific gravity</u> , and bitterness in <u>IBUs</u> or <u>HBUs</u> ) and <u>color</u> (as SRM or a textual description of the color)
4 points	<u>Batch size</u> , ingredients ( <u>grist</u> , <u>hops</u> , <u>water</u> , and <u>yeast</u> ) and their <u>quantities</u>
7 points	<u>Mashing</u> , <u>boil</u> , <u>fermentation</u> , <u>packaging</u> , and other relevant brewing procedures
7 points	Explain how the recipe fits the style's characteristics for <u>aroma</u> , <u>appearance</u> , <u>flavor</u> , <u>mouthfeel</u> , and other significant aspects of the style; and describe <u>how the ingredients and processes used impact this style</u> .

**1. OG:** \_\_\_\_\_                      **3. IBUs** \_\_\_\_\_  
**2. FG:** \_\_\_\_\_                      **4. SRM/Color** \_\_\_\_\_

**5. Batch Size** \_\_\_\_\_ gallons

**6. Grist:** ( \_\_\_\_\_% efficiency)                      **7. Hops:**  
 \_\_\_\_\_ lb \_\_\_\_\_ oz bittering: \_\_\_\_\_ %AA \_\_\_\_\_ min., 25% Util.  
 \_\_\_\_\_ lb \_\_\_\_\_ oz flavor: \_\_\_\_\_ %AA \_\_\_\_\_ min., 5% Util.  
 \_\_\_\_\_ lb \_\_\_\_\_ oz aroma: \_\_\_\_\_ %AA \_\_\_\_\_ min., 0% Util.

**8. Water:** \_\_\_\_\_

**9. Yeast:** \_\_\_\_\_ variety, pitched post-chill, at \_\_\_\_\_ °F, aerated by \_\_\_\_\_

**10. Mash:** \_\_\_\_\_ technique  
 \_\_\_\_\_ rest \_\_\_\_\_ °F \_\_\_\_\_ minutes  
 \_\_\_\_\_ rest \_\_\_\_\_ °F \_\_\_\_\_ minutes  
 \_\_\_\_\_ rest \_\_\_\_\_ °F \_\_\_\_\_ minutes

Vorlauf: \_\_\_\_\_ minutes  
 Sparge/Lauter \_\_\_\_\_ °F, \_\_\_\_\_ gallons, \_\_\_\_\_ minutes

**11. Boil/Chill:**  
 Boil \_\_\_\_\_ minutes, full rolling boil to facilitate hot break, adding hops according to schedule above.  
 Finings: \_\_\_\_\_, Added at \_\_\_\_\_ minutes

Chill: Use \_\_\_\_\_ method to facilitate cold break, to \_\_\_\_\_ °F, prior to pitching yeast

**12. Fermentation:**  
 Primary: \_\_\_\_\_ °F, \_\_\_\_\_ days  
 Diacetyl Rest: \_\_\_\_\_ °F, \_\_\_\_\_ days  
 Secondary: \_\_\_\_\_ °F, \_\_\_\_\_ days

**13. Packaging:**  
 Bottle Condition: \_\_\_\_\_ cup priming sugar at bottling **OR** Keg with \_\_\_\_\_ volumes CO2 at kegging

**14. Aroma:** \_\_\_\_\_

**15. Appearance:** \_\_\_\_\_

**16. Flavor:** \_\_\_\_\_

**17. Mouthfeel:** \_\_\_\_\_

**18. How ingredients/procedures impact the style:** \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

**T.15. This question addresses two separate ingredients, malt and yeast. Please provide the following information in your answer: (1) Identifying and describing the different types of malts by their color and the flavor they impart to the beer, and give at least four distinct styles with which specific malts are associated. (2) Provide five distinct considerations in selecting the appropriate yeast strain for a given beer style.**

5 points	Identify types of malt.
7 points	Identify types of malt associated with at least four beer styles.
8 points	Provide five distinct yeast strain selection considerations.

**A. Identify and describe the different types of malts by their color and the flavor they impart to the beer. Give at least four distinct styles with which specific malts are associated.**

Identify	Describe	Color	Flavor	Styles

**B. Provide five distinct yeast strain selection considerations.**

Consideration	Effect on Beer

## THE BJCP EXAM FOR DUMMIES 2013

*COMBINED Possible (named) Section II Beers (64 beers)*

- American Amber Ale
- American Barleywine
- American Brown Ale
- American IPA
- American Pale Ale
- American Stout
- American Wheat or Rye Beer
- Baltic Porter
- Belgian Blond Ale
- Belgian Dark Strong Ale
- Belgian Dubbel
- Belgian Golden Strong Ale
- Belgian Pale Ale
- Belgian Tripel
- Berliner Weisse
- Bière de Garde
- Blonde Ale
- Bohemian Pilsener
- Brown Porter
- California Common Beer
- Classic American Pilsner
- Classic Rauchbier
- Cream Ale
- Dark American Lager
- Düsseldorf Altbier
- Doppelbock
- Dortmunder Export
- Dunkelweizen
- Dry Stout
- Eisbock
- English Barleywine
- English IPA
- Extra Special/Strong Bitter (English Pale Ale)
- Flanders Red Ale
- Flanders Brown Ale/Oud Bruin
- Foreign Extra Stout
- German Pilsner (Pils)
- Gueuze
- Imperial IPA
- Imperial Stout
- Irish Red Ale
- Kölsch
- Light American Lager
- Maibock/Helles Bock
- Mild
- Munich Dunkel
- Munich Helles
- North German Altbier
- North German Altbier
- Northern English Brown
- Oatmeal Stout
- Oktoberfest/Märzen
- Old Ale
- Premium American Lager
- Rauchbier
- Robust Porter
- Roggenbier (German Rye Beer)
- Russian Imperial Stout
- Saison
- Schwarzbier
- Scottish Export 80/-
- Scottish Heavy 70/-
- Scottish Light 60/-
- Southern English Brown
- Special/Best/Premium Bitter
- Standard American Lager
- Standard/Ordinary Bitter
- Straight (Unblended) Lambic
- Strong Scotch Ale
- Sweet Stout
- Traditional Bock
- Vienna Lager
- Weizen/Weissbier
- Weizenbock
- Witbier

**(Named) Beers/Meads/Ciders that WON'T be on the (ESSAY) test (33):**

- Belgian Specialty Ale
- Fruit Lambic
- Fruit Beer
- Spice Herb Vegetable Beer
- Christmas/Winter Specialty Beer
- Other Smoked Beer
- Wood Aged Beer
- Specialty Beer
- Dry Mead
- Semi-Sweet Mead
- Sweet Mead
- Cyser
- Pymment
- Other Fruit Melomel
- Metheglin
- Braggot
- Open Category Mead
- Common Cider
- English Cider
- French Cider
- Common Perry
- Traditional Perry
- New England Cider
- Fruit Cider
- Applewine
- Other/Specialty Cider/Perry

**THE BJCP EXAM FOR DUMMIES 2013**

**Sample Lined page for exam**

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**Participant \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_**

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