WELCOME TO EXAM REVIEW
No cell phones, laptops or palmtop computers are to be used during the meeting.

Thank you for your cooperation.
Workshop Recruiting

The Recruiter for the Program…

- Receives lists of certified ASQ individuals from HQ twice a year
- Chooses a stratified sample for recruiting new volunteers to ensure diversity
- Reviews past volunteer lists to select veteran participants who can help new volunteers
- Supports diverse participation for each workshop with respect to geography, expertise & experience, industry sector, and company size
Workshop Recruiting

How was I selected as “one of the chosen”?
- #1: Workshop diversity
- Luck / Chance
- Availability

How do I remain a “chosen one”?
- Be a team player
- Complete the back of the Feedback form and tell us you would like to participate again
To produce a final exam that meets test specifications and accepted assessment standards
Committee needs to ensure that each item:

- tests candidates’ knowledge of the subject matter
- has one and only one correct answer (Key)
- does not cue or overlap other items
- is worded clearly and unambiguously
STEPS IN TEST DEVELOPMENT

New Cert. approved by ASQ BOD

5-year Review of Existing Program

Job Analysis Workshop → Job Analysis Survey → Test Specifications Workshop

Item-Writing Workshop

Enough Items in Pool?

Yes

Cut-Score Study

Score Exams and Notify Candidates

No

Item-Review Workshop

Exam-Review Workshop

Review Camera-Ready Version

Administer Exam

Item Analysis & Scoring Changes

New BOK?

Yes

No

You Are Here!
ASSESSMENT CONCERNS

VALIDITY

Evidence that the test is measuring what it says it will measure.

Processes that provide test validity evidence include:

- Job Analysis
  - Test Specifications
    - Body of Knowledge (BOK)
      - Test Question Classification
        - Reference Text & Rationale
ASSESSMENT CONCERNS

RELIABILITY

Is the behavior being measured consistently?

Consistency is based on

- Test Length
- Consistency in Test Administration

- Clarity of Questions
- Appropriateness of Questions
Equating = Fairness to Candidates

Equaters defined:
A set of 25-30 items selected from a previous administration of the exam and placed in the newly created exam in same position as in the previous exam. This set of items represents a “Mini-test” in terms of BOK coverage and difficulty.
9. Which of the following items is NOT part of inspection planning?
   (A) Characteristics to inspect
   (B) Sampling plans
   (C) Cost of inspection
   (D) Calibration status
   (C) 66.67%

10. In preparation for construction of a cause and effect diagram, it is important to
    (A) plot separate charts for each source
    (B) focus only on what makes things go wrong
    (C) record everything people suggest
    (D) validate possible root causes

11. Inspection accuracy increases with
    (A) reductions in defect rates
    (B) repeated inspections
    (C) additional product complexity
    (D) order of sample selection

12. Which of the following describes the Deming method for continuous improvement?
    (A) Cost of quality analysis
    (B) Process map
    (C) Tree diagram
    (D) Plan-do-check-act cycle

13. The accuracy of a profilometer is verified with
   (A) fingernail comparators
   (B) surface plates
   (C) calibration patches
   (D) optical flats

14. The ability of a material to resist mechanical penetration is called the limits for a
    (A) real bias
    (B) precision
    (C) accuracy
    (D) true value

15. The accuracy of a profilometer is verified with
   (A) fingernail comparators
   (B) surface plates
   (C) calibration patches
   (D) optical flats

16. Which of the following tools would be best for measuring projected surface
    (A) Optical comparator
    (B) Thread micrometer
    (C) Profilometer
    (D) Protractor

DECEMBER 2015 EXAM
Equated to JUNE 2014

9. What is the percent yield for a normally distributed process in which the item length
   specification is 5.750 ± 0.005, is 5.754, and the standard deviation is 0.002 ?
   (A) 19.15%
   (B) 30.85%
   (C) 50.00%
   (D) 69.15%

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14. Which of the following measures is a sufficient statistic for the parameter µ?
    (A) Median
    (B) Median
    (C) Mean
    (D) Mode

15. Which of the following tools can only be used to collect attributes data?
    (A) Dial indicator
    (B) Ring gage
    (C) Micrometer
    (D) Steel scale
## 100-Item Test with 25 Equaters

<table>
<thead>
<tr>
<th></th>
<th>Dec. 2015 Admin</th>
<th>June 2014 Admin</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Exam</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean score = 80</td>
<td>Mean score = 70</td>
<td></td>
</tr>
<tr>
<td><strong>Mini Exam (equaters)</strong></td>
<td>Mean score = 20</td>
<td>Mean score = 20</td>
</tr>
</tbody>
</table>

Is there a difference in the tests or a difference in the groups?
THE STEM: Which of the following must be specified by the client in an external systems audit?

THE OPTIONS:

Distractor (A) An engineering specification

Key (B) A reference standard

Distractor (C) A policy manual

Distractor (D) A quality manual
IV. AUDIT REPORTING (10 questions)

A. Review and Finalize Audit Results

Identify and organize information including evidence compiled during the audit.  (Apply)

B. Written Report Format and Content

1. Audit details

Identify, organize, and summarize audit details to be covered in the report such as purpose, scope, team members, etc.  (Apply)

2. Compliance

Organize and summarize evidence to support conclusions about compliance.  (Create)
Which of the following symbols represents a decision point in a flowchart?

(A) 

(B) 

(C) 

(D) 

\[\text{Choices: (A), (B), (C), (D)}\]
FLAGGED ITEMS TO BE REVIEWED ARE THOSE WITH

- 3 or more KEY disagreements
- 3 or more committee comments
LARGE GROUP PROCESS

Turn to the first checked item
- Read item, read comments
- Discuss
- Disposition item
  (Reset timer)

- Move on to the next flagged item and repeat the process

3-minute time limit
• Documents we will be working from
  ▪ Expanded version
  ▪ Collated comments

Documents that are nice to have
  ▪ BOK
  ▪ Personal notes or “At-home” copies
DISCUSSION POINTERS

• Authors of comments should start the discussion
• Remaining committee members can
  ▪ Agree
  ▪ Disagree
  ▪ Ask for further explanation

→ **Add** relevant comments
→ **Propose** immediate revisions (quick-fix)
→ **Park It** immediately – “We know it’s broke: Put it in the parking lot & move on!”
ITEM DISPOSITION

PARKING LOT:

✓ **Revise:** needs further work in small group

✓ **Replace - Only for this Exam:** cueing or overlap with another item requires a replacement from “9’ers”

✓ **Replace - Put on Hold:** item worth saving, but needs further work at a future item review meeting

✓ **Replace - Delete and Kill Forever:** reserved for items the committee never wants to see again
VOLUNTEERS NEEDED . . .

PARKING LOT ATTENDANT

TIME KEEPER